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ONTARIO HYDRO  
ANNUAL REPORT 1988



IN OUR 1988 ANNUAL REPORT,

WE CELEBRATE WHAT WE

VALUE MOST - THE PEOPLE

AND THE PROVINCE WE SERVE...

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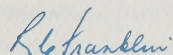
To the Honourable Robert Wong, Minister of Energy

1

I am pleased to submit to you Ontario Hydro's report of the financial position of the corporation,  
with discussion and analysis of issues and initiatives for 1988 and beyond.

We thank you and your staff in the Ministry of Energy.

On behalf of the Board,



*Robert C. Franklin*

*Chairman and President*

*April, 1989*

## CORPORATE PROFILE

At Ontario Hydro, we serve the electricity needs of the Province by making sure we are in tune with our customers and their expectations. We care about providing good energy value, about the environment, about involving the public in planning for the future, and about being open and accessible.

Ontario Hydro was created in 1906 by special statute of the Province of Ontario. We are a financially self-sustaining corporation without share capital. Bonds and notes issued to the public are guaranteed by the Province.

Under the Power Corporation Act, it is our responsibility to generate, supply and deliver electricity throughout Ontario. We also produce and sell steam and hot water as primary products. We work with and regulate municipal utilities, and, with the Canadian Standards Association, we are responsible for the inspection and approval of electrical equipment and wiring throughout the Province.

Who are our customers? We sell wholesale electric power to 316 municipal utilities, which, in turn, retail it to customers in their service areas. We also serve directly more than 100 large industrial customers and 863,000 small business and residential customers in rural and remote areas. The ultimate number of customers, direct and indirect, is 3.4 million.

Ontario Hydro operates 80 hydraulic, fossil and nuclear generating stations and an extensive transmission system across the Province.

The corporation is directed by a Board of Directors. Our Chairman, Vice-Chairman, and a maximum of 10 members from various sectors of our society are appointed by the Lieutenant-Governor-in-Council of Ontario. The President, also a Board member, is a full-time employee of the Corporation appointed by the Board.

There are six Committees of the Board: Finance, Audit, Management Resources, Social Responsibility, Technical Advisory, and Pension and Insurance.

Our Head Office is at Hydro Place on University Avenue, Toronto. We also have six Regional and forty-eight Area Offices to serve our customers throughout Ontario.

## FINANCIAL HIGHLIGHTS

	1988	1987
	<i>millions of dollars</i>	
Revenues	5,813	5,280
Net Income	626	271
Total Assets	34,358	32,657
Investment in Fixed Assets	2,689	2,524



Annual Reports capture, in part, a corporation's financial position at a prescribed moment in time every year. But what also lies behind our report for 1988 is attention to serving the needs of Ontarians.

In the past, we concentrated on product reliability, but today, the scope of our relationship with the people of Ontario has expanded with their expectations of Ontario Hydro. Much more than a product is required. Thus in our 1988 Annual Report, we wanted to capture our appreciation of the people and the landscape of Ontario as well as our financial results.

We value the quality of life Ontarians have achieved, and we will continue to contribute to the steady improvement of all that Ontario strives for as a Province. Our photography gives a picture of the human and environmental side of Ontario Hydro's business—the diverse people and communities, values and expectations that we serve.



*Robert C. Franklin, Chairman and President, Ontario Hydro*



## A MESSAGE FROM BOB FRANKLIN, CHAIRMAN AND PRESIDENT

1988 has been another year of change for Ontario Hydro, with more to come. Some aspects of Hydro will not change, nor would our customers want them to. Our technical excellence, our commitment to reliable service—these we will adapt to a growing Ontario community.

But for Ontario Hydro, our response to growth goes beyond just supplying more power. The Ontario community is growing in other ways, expecting new kinds of choices, services, and advice about how to use energy. That means more efficiency in our organization and more flexibility in responding to change in our customers' expectations.

Change is difficult. Big successful companies do not quickly embrace organizational or cultural change. Operating complex systems under the discipline of public accountability takes time.

Over the years electricity has become more than an essential service. Today in our prosperity, we depend upon electricity for our very way of life: being without electricity for more than a short interruption is as unthinkable as being without water.

While a reliable supply of electricity is now taken for granted, the truth is that we need to manage our consumption more efficiently and consider new sources of supply so that we won't run out.

But reliable economic power is far from the whole story. Additional expectations of the people of Ontario have emerged.

What does that mean to Ontario Hydro? It brings home the importance of reliable electricity supply at the same time as it introduces new standards and obligations for service excellence. We're responding to customer needs through leadership in energy efficiency.

Even as we depend more and more heavily upon electricity, Ontarians are becoming more and more concerned about the environmental effects of generating and transmitting it. Since there is no environmentally benign way to produce and deliver electricity on a large scale, how do we balance the assumption of ample power with preserving the environment?

Like our customers, we consider the environment a top priority. In the past, Hydro tried to be environmentally responsible, and was so by the standards of the day. But society has reached a more sophisticated understanding of environmental problems, and yesterday's standards and priorities no longer suffice.

This year, we established our new Environment Division. You can expect to see more action on minimizing environmental effects, monitoring environmental performance, and advancing research to improve the overall efficiency and safety of our technologies.

In this, we need your participation too because there are trade-offs and we cannot have electricity without environmental effects. If we truly value the environment, then we must also value electricity enough to optimize our system, to use it with highest efficiency, and never to waste it.

There are many things we can do across the Province to level out the amount of electricity we use and to get maximum benefit at minimum cost. We have already begun some specific industrial programs like energy monitoring and the use of electricity at off-peak times. But we'd like to work with all Ontarians on a Province-wide, concerted effort toward a more conscientious control over energy efficiency.

What we have before us is a new era of partnership between Ontario Hydro, the municipal utilities and our customers, involving planned and thoughtful action by every Ontarian who uses electricity. We can maximize value within Hydro's existing electrical system and encourage energy efficiency everywhere.

But we need both large and small measures. Just as Ontario Hydro will be rehabilitating and redeveloping aging facilities for cost-effectiveness, we hope that every household and business will choose the most efficient appliances and practise energy conservation. Every measure, large and small, multiplied by thousands of businesses and millions of households across Ontario, can make a big difference to our energy future.

Another big difference can come from alternative sources of supply. For that very reason, we established another new division in 1988, called Non-Utility Generation Division. We want to assist private enterprise in developing more independent generation of electricity across Ontario. As you can read in the following pages, Ontario Hydro will act as a facilitator in building this important industry. The two-tiered map included in this year's report shows both Ontario Hydro's and independently-owned stations across the Province. Independent generation is playing a more and more important role in meeting the power needs of the Province. We want to work with you to expand its role.

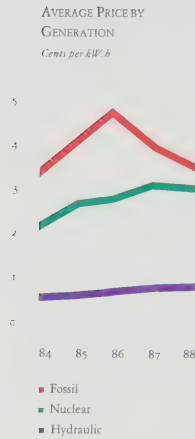
The development of independent generation, along with energy efficiency and conservation across the Province are practical, concrete, and measurable ways of adding value to our electricity system. They make excellent business sense, respond to real needs, and are necessary for the long-term well-being of Ontario.

However, even with all these initiatives, we will still need a major new source of electrical supply sometime shortly after the turn of the century. That's why in 1988 we continued our examination of appropriate demand and supply planning options for the Province, so that we will be able to collectively make far-reaching decisions on ways to meet growing energy needs. The reliability of Ontario's electricity supply in the 1990s and beyond rides on our success on each of these fronts. We welcome your partnership in our efforts.

*R. G. Franklin*







## CONTINUING GROWTH

Ontario continues the strong growth in electricity consumption that began following the recession of the early 1980s. Over the past five years, consumption has risen an average of 5 per cent a year. In 1988, electricity consumption rose by 6.5 per cent, reflecting continued strong growth in the provincial economy.

During 1988, a total of 133.1 billion kilowatt-hours was consumed by our primary customers and secondary customers outside the Province. This is 5.0 per cent higher than in 1987, and 2.2 per cent above our forecast. Peak demand for power in 1988 was 23 million kilowatts, 12.1 per cent higher than the 1987 peak.

Hydro's exports of power in 1988 amounted to 5 billion kilowatt-hours, a decrease from the 1987 level of 6.5 billion kilowatt hours. These exports, primarily to the American market, continued to benefit Ontario power consumers by generating net revenues of \$45 million.

## MEETING OUR CUSTOMERS' NEEDS

Hydro relies on three kinds of generation: hydraulic generation from our rivers; thermal generation fuelled by coal and oil; and nuclear generation using natural uranium as the fuel. Most of our customers' constant daily power needs are supplied from hydraulic and nuclear power stations. Since people use more electricity around breakfast time and again around dinnertime, there are peak periods of the day when we need to increase the supply of power quickly. Coal-fuelled and oil-fuelled stations are more expensive to operate but their greater flexibility makes them suited to meeting peak demand periods.

## ADDING VALUE TO SERVICE

Hydro has been acutely aware of change in industry and in society through the 1980s, with heightened public concern about the impact of our operations on the environment, and the energy system for the next decade. We have responded to these public views in our planning and programs. Our 1987 annual report dealt with lowering the environmental impact of our operations. In 1986, we emphasized how we were responding to the changing needs and values of our customers through expanded service. 1988 was marked by the growing need of our customers for more expertise in energy efficiency and technical innovation. The onus is on Hydro to listen and come to terms with these new demands.

## MAJOR ACCOMPLISHMENTS IN 1988

**Planning Strategy Reviewed**—At the end of 1987, Hydro submitted its Demand/Supply Planning Strategy to the Ontario Government. It guides our planning for tomorrow's electrical energy system to the turn of the century. The strategy was reviewed during 1988 by the Select Committee on Energy of the Ontario Legislature, which gave us an opportunity to present our understanding of what Ontarians expect from us. As more than just a good electricity company, we must deal with social, economic and environmental factors, as well as technical considerations, in making decisions.

We are trying to maximize gain by influencing the way our customers use electricity, and by making electricity do more for the dollar in demand management programs that will play a major role for Ontario in the 1990s and beyond. We have set a target of 4,500 megawatts—equal to the electricity needs of Metropolitan Toronto—to be achieved through demand management and energy efficiency measures by the year 2000.



We'd like to work with all Ontarians on a Province-wide, concerted effort towards a more

conscious control over energy efficiency,



*Today, the scope of our relationship with the people of Ontario*

*has expanded with their expectations of Ontario Hydro*



**Energy Efficiency Leadership** — On using energy more efficiently, customers will need more information about heating and air-conditioning systems, motors, lighting, appliances and other applications. Better information and standards will result in about 1,500 megawatts of the amount we expect Ontario to save. Financial incentives to help customers install more efficient systems and to use energy more wisely will result in a future saving of 2,000 megawatts. The rest will come from programs to encourage customers to shift their demand from peak daytime hours to off-peak nighttime hours. That makes a total of 4,500 megawatts without building new sources of supply.

We also expect to realize another 1,000 megawatts of power through the development of small generation projects, such as independent hydraulic developments or cogeneration projects which produce steam for industrial use and for generating electricity.

The achievement of that substantial 5,500-megawatt target will still leave a need for a major new source of supply for the beginning of the next century. Ontario Hydro will be introducing in 1989 an annual planning document that spells out a range of specific options for meeting future supply needs.

**A New Strategy to Maximize Customer Values** — The changing economic, environmental and social climate has dictated a need to update our corporate strategy. The new Corporate Strategy for the 1990s signals a shift from “cost to value, from systems to individuals, from telling to listening. The top priority for the 1990s will be improving the energy efficiency of our customers and the operating efficiency of the Corporation. The five key areas of the strategy are responsiveness to customers, demand management, supply management, the environment and corporate management.

**Corporate Initiatives for 1988** — We launched specific organizational, environmental and energy management initiatives in 1988 to increase our flexibility and responsiveness. There were changes in the corporate organization, including a flattening of the reporting relationship between the various branches and the President. The Power System Program Branch was renamed Corporate Planning Branch and expanded to plan all long-term power supply, advocate environmental policy initiatives, and encourage non-utility generation.

**Organizational Effectiveness** — To improve productivity, corporate-wide organizational effectiveness studies were started in 1988. Extensive redeployment support services are being provided to employees who are displaced by these organizational changes.

**Customers Are Calling** — Meeting our customers’ needs requires two-way communication, and in 1988 we inaugurated an extensive program, featuring the 1-800 telephone system to allow our customers quick and extensive access to our various services and functions. We will continue to offer it in 1989 in conjunction with the municipal utilities.

Our customers have indicated a desire to improve energy efficiency. Response to a free fridge thermometer offer made in the fall depleted our initial supply of 25,000 thermometers in three weeks—and the number of requests eventually soared to 120,000.

**Hydro is Answering** — Another first in 1988 was the opening of Your Hydro Store in the Fairview Mall in Willowdale. Not a retail store, it offers walk-in customers the latest information on energy efficient lighting and appliances, and heating and cooling systems.

Our Speakers' Bureau arranged almost 600 speeches and presentations by Hydro staff during 1988, on topics ranging from nuclear power and future energy options, to electrical safety and the environment. We also welcomed more than 165,000 visitors to our nine information centres at power stations across the Province.

**Ontario Energy Board**—Hydro made its annual appearance before the Ontario Energy Board, which reviewed our request for a 5.5 per cent average increase to the 1989 price of electricity. Our Board of Directors approved a final 1989 rate increase of 5.3 per cent at its October meeting.

OUR TOP COMMITMENTS IN 1988

NEW ENVIRONMENT DIVISION

The 1980s have brought global attention to environmental issues and a new commitment to solving environmental problems. In keeping with these concerns, Ontario Hydro established its Environment Division in 1988. It will be responsible for environmental initiatives, for coordinating and integrating all our environmental activities and for communicating to employees and the public how Hydro is realizing commitment to environmental management.

1988 saw several environmental initiatives by Hydro. We completed our plans to reduce acid gas emissions to the 1994 target levels, with annual targets for meeting the goal, and presented them to the Provincial Government in January, 1989.

**Reducing Acid Gas** — Our emphasis in the fossil plants is on acid gas emission reductions. We have three strategies: first, to reduce use of coal by maximizing hydraulic and nuclear generation. Second, when we have to burn coal, to use a lower sulphur coal. Thus we have developed a flue gas conditioning system at Lambton and Nanticoke. This modification will allow these plants to burn coal that has a lower sulphur content than the coal they were originally designed to burn. Third, when we have to burn higher sulphur coal, we will "scrub" the emissions. We have prepared and submitted an Environmental Assessment that covers a variety of acid gas control processes (for 4 different kinds of "scrubbers"), as well as the potential locations, at Lambton and Nanticoke Generating Stations.

**PCB Decontamination** — We have also embarked on a five-year program to decontaminate most low-level PCB-contaminated oil now in storage through a process developed by Ontario Hydro. We recognize the hazards of PCBs, and in the longer term, we'll be converting in an orderly way to PCB-free equipment.

**Reduction of Herbicide Use** — We also announced that we will eliminate all spraying of herbicides on brush under power lines along roadsides and near residential lots; and cut back total use of herbicides by 35 per cent. Hydro researchers are also looking at new cutting techniques and other mechanical brush control methods for further reduction.

**Tree Replanting** — In 1988 we updated and promoted our tree-replanting program as compensation for tree trimming on private property. Under the program, our customers receive replacements for any trees that have to be cut down because they interfere with a power line. The customer is consulted before any removal takes place.





*How do we balance the assumption of ample power with preserving the environment?*





*We hope that every household and business will choose the most*

*efficient appliances and practise energy conservation*

In the years ahead, we will continually test new approaches and new methods of limiting our impact on the environment. We accept the urgency of global environmental problems and the need for international and local initiatives toward sustainable development.

**Waste Management Program Inside Hydro** — Inside Ontario Hydro, we are launching a waste management program in all our offices and plants across the Province to recycle paper and to reduce or eliminate the use of environmentally harmful products, such as styrofoam cups containing chlorofluorocarbons (CFCs).

#### ENERGY MANAGEMENT

It is more important than ever that we consult with our customers so that we can better manage our energy needs in the decade ahead. To reflect this emphasis, the Marketing Branch was renamed the Energy Management Branch in 1988, with the Vice-President reporting directly to the President.

Energy Management Branch shows our customers how they can save electricity and money by using electricity more wisely, as well as how new electrotechnologies can contribute to productivity, quality, and a better environment. Our approach to increasing the efficiency of the electrical energy system falls into three basic areas.

**Information-Based Conservation** — Our customers tell us that they are interested in receiving energy savings tips—from advice on residential weather-stripping or insulation to energy efficient commercial lighting or industrial motors. By providing printed information, trade-shows, home energy audits and billing analysis, we will help our customers use electricity more efficiently. We estimate that positive response will result in savings of about 1,500 megawatts over the next decade. In 1988, we expanded our special information days for industrial customers.

**Conservation Incentives** — The second area, incentive-driven conservation and efficiency improvements, takes a more active approach, requiring utility leadership and customer participation. A number of programs have been launched in 1988 toward saving 2,000 megawatts by the year 2000. The programs range from incentives to use high efficiency electric motors to installing energy monitoring systems in 12 representative industries. Other programs launched in 1988 include more efficient streetlighting, and promoting energy efficiency in the design of new buildings.

**Lower Price for Time of Use** — The third way to get the most from our resources is load shifting. Many large power users are willing and able to shift some of their energy-intensive workload to off-peak hours. Some customers, for example, can shift high energy usage processes to the nighttime, when rates are lower. This reduces the high peak in demand during the daytime, and results in cost savings that can be passed on to our customers. An example is the thermal cool storage system, in which water is chilled at night and used during the day for air-conditioning in commercial buildings. There are 87 municipal utilities opting for time-of-use rates when they begin in 1989.

The target for load shifting is 1,000 megawatts by the year 2000. Combined with the targets for information and incentive-based conservation, that makes a total of 4,500 megawatts of power that won't have to be produced by our generating stations.

Energy management is a megaproject in itself, but will cost significantly less than a new generating station. Deferring the need to expand our generation system through conservation will also lower the environmental impact of our operations.

**New Business Ventures**—Our New Business Ventures Division (NBV) marked its fifth year of operation in 1988. Set up to market internationally Hydro's technology and expertise, NBV has had five consecutive years of financial growth in profitability and professional development of Hydro employees. NBV continued in 1988 to provide training and utility expertise in Egypt, Hungary, Pakistan, and several other countries.

Other activities in 1988 included a contract with the Canadian International Development Agency (CIDA) to help with the restoration of Jamaica's transmission system after the September hurricane. 154 people came to Hydro from utilities all around the world for training.

NBV welcomed the third company to locate at the Bruce Energy Centre, Sunroot Energy Corporation. The sale of Cobalt 60, produced by our nuclear reactors, to the worldwide medical community for the treatment of cancer, and sales of heavy water and deuterium gas continue to be a mainstay of the NBV operation.

#### NEW DIVISION FOR NON-UTILITY GENERATION

Ontario Hydro is helping independent entrepreneurs to start up small generating stations. We established in 1988 a new Non-Utility Generation (NUG) Division, which is responsible for nurturing independent generation of electricity across the Province.

Independent generation has always played a role in helping Hydro meet the energy needs of Ontario. We've been working with developers and the industry for three years to build a stronger working relationship. With the establishment of a Division dedicated to this cause, we expect to play a greater role in the growth of an important industry.

It's a win-win situation for Hydro and for the independent generator. For Hydro, every source of independent generation means deferring the need to build new facilities. For the independent generator, we act as a catalyst in arranging financing and buying back surplus power. We can give the new business a sense of security from the start with long-term contracts to purchase their production that guarantee cash-flow for their full term.

We see our role as one of opening up generation opportunities by bringing qualified entrepreneurs with the interest and initiative into the supply side of Ontario's electricity system. Currently we are looking at more than 100 proposals for new projects. By June of 1988, Hydro had facilitated operation of 22 projects which were producing 25 megawatts of power.

Across the Province, there are existing projects currently generating over 1,000 megawatts of power, or about 5 per cent of our needs. On page 24 we have a two-tiered map of Ontario's generating stations, one showing our publicly-owned facilities, with the overlay indicating private generating stations across the Province.

#### OUR CURRENT OPERATIONS

##### MAKING THE MOST OF OUR GENERATION AND TRANSMISSION POTENTIAL

**Nuclear Safety**—The safe operation of our nuclear stations is of paramount importance. We have an enviable safety record, but we must always look for ways to improve. The Hare Commission on Nuclear Safety concluded that our nuclear stations are being operated safely and at a high standard of technical performance. However, the report did suggest some areas for improvement and Hydro is pursuing those recommendations.

In 1988 at the new Darlington Nuclear Generating Station, we have installed, commissioned, and tested our new nuclear training simulator. Very important for nuclear safety, the simulator allows us to put nuclear operators through their paces before the first Darlington unit goes into service.



*Ontarians are becoming more and more concerned about the environmental effects*

*of generating and transmitting electricity.*





*Our technical excellence, our commitment to reliable service—*

*these we will adapt to a growing Ontario community*

In all our nuclear operations, after 143 million hours worked from 1955 through 1988, there has never been a fatality in the operation and maintenance of a nuclear facility and no employee has ever received a detectable injury due to radiation. There has never been a serious radiation exposure. We have never exceeded or even approached public radiation dose limits. There has never been an acute release of radioactivity that resulted in a measurable dose to a member of the public. Emissions of radioactivity from our CANDU stations have typically been less than 1 per cent of the regulated limits.

The production performance of Hydro CANDU units has been excellent with the overall 1988 and lifetime capacity factors exceeding those of any other type of nuclear reactor. In 1988, in terms of individual nuclear unit lifetime capacity factors, 9 of the 16 Ontario Hydro units are among the top 25 units over 500 megawatts in the world.

At Pickering Nuclear Generating Station "A", staff completed retubing of Unit 2 and returned the unit to service in November, in time to meet customers' higher needs over the winter months. Retubing was necessary because studies following the rupture of a pressure tube in 1983 indicated further ruptures were possible. With the shutdown for retubing, we were able to install an additional safety system that meets Atomic Energy Control Board (AECB) requirements. Studies are also in progress at Pickering for increasing the output of the whole station by 5 per cent, without any major system changes.

During 1988, Hydro's Board of Directors approved the retubing of Units 3 and 4 at Pickering "A". This is a major project, dedicated to getting highest value and longest life out of our existing facilities.

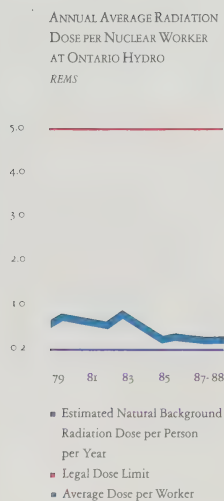
Construction continued at the Darlington Nuclear Generating Station, where the first unit is expected to go into service in 1989, and the last of the four units in 1992. Darlington's eventual output of 3,524 megawatts will be enough power to meet the needs of most of Metropolitan Toronto.

Construction of the Tritium Removal Facility located within the Darlington complex was completed in 1988. The process of isolating and extracting tritium from tritiated heavy water reduces radioactivity and makes the environment safer for nuclear station employees. In September, the AECB issued a license permitting us to transport tritiated heavy water from the Pickering plant to the Darlington facility. Hydro has not yet decided on the issue of selling tritium, which has a high commercial value in manufactured goods such as self-illuminated signs and in medical research. While any revenues would help reduce the overall cost of power to our customers, we recognize there are public concerns about such sales since tritium is also a vital component in nuclear arms.

**Nuclear Cost Review** — In 1988 a Government-appointed panel of international nuclear experts completed a major review of nuclear costs as part of the provincial Nuclear Cost Review. Their report is expected early in 1989.

**Fossil Fuel Stations** — The reduction of acid gas emissions from our coal-fuelled stations continues a priority. The other major challenge will be restoring and maintaining our aging fossil plants, to ensure and extend their service lives at a high standard of reliability. We are facing rehabilitation of Lambton, with retrofitting of "scrubbers". The Lakeview plant is nearing the end of its designed lifetime. The possibility of rehabilitation, which could add 10 years to its lifetime, increase efficiency and reliability, and defer its replacement, is being evaluated.

**Hydraulic Potential** — Ontarians tend to identify the name Hydro with hydraulic development, even though most of our power now comes from other sources, and most accessible hydraulic sites have been developed. However, we continue to evaluate every possibility for maximizing our hydraulic generating capacity, through rehabilitation and construction.



In 1988, we submitted an environmental assessment for the development of a station on the Little Jackfish River, which flows into Lake Nipigon. We continue to plan for a third generating station with a net capacity of 550 megawatts at the Sir Adam Beck complex at Niagara Falls. We also plan to expand our existing stations on the Mattagami River in Northeastern Ontario, and we've initiated studies for the development of the Pic River on the north shore of Lake Superior, and the redevelopment of Big Chute on the Trent-Severn Waterway.

**Repairing Old Dams** — Some Ontario dams, like Big Chute, date back as far as 1906; many are in need of rehabilitation. Using state-of-the-art seismic methods of assessment, we are making a concerted effort to assure uniform and consistent dam repair across the Province.

In 1988 we completed final design review of concrete structures on the Madawaska River system in Eastern Ontario; preliminary assessment of concrete dams on the Wanapitei flowing into Georgian Bay; and the Mississagi, which flows into Lake Huron. We completed construction of Cedars Channels Dam on the Albany River and continued construction of the north channel dam at Crystal Falls on the Sturgeon River.

**Alternative Energy Sources** — As part of our role of energy supplier, Hydro was involved in a number of alternative energy projects in 1988.

**Burning Grain Waste** — We demonstrated that we could burn grain waste at the Thunder Bay Generating Station, reducing waste for the community and contributing 5 per cent of the plant's heat energy.

**Wind Power** — Our 60 kilowatt wind turbine at Fort Severn in the remote north entered its second year of trial operation. Working in tandem with the diesel generating station, it reduces the use of expensive diesel fuel and lowers the cost of power to customers in the community.

**Solar** — Another remote community, Big Trout Lake, had a second year of success with our 10 kilowatt photovoltaic system, which converts solar energy into electricity. While operating virtually maintenance-free, widespread use of solar is not economically viable yet.

**Fusion** — Fusion technology has tremendous potential because it is safe and has minimal impact on the environment. In 1988, Canada joined the European community, Japan, the USSR, and the United States to collaborate on a major fusion project. The Canadian team is managed by Ontario Hydro in partnership with Atomic Energy of Canada Limited, and the Government of Ontario. Hydro staff members in West Germany are contributing significant expertise in the design of fuelling systems, safety systems, and maintenance approaches.

**Transmission Highlights** — We have major and minor transmission line and transformer station projects underway throughout the Province. Last year, Hydro began construction of two high capacity lines, one from the Bruce Nuclear Power Development to London, and the other from London to Nanticoke Generating Station.

By November, on the first Kingston to Ottawa transmission line, we were able to transmit power at 230 kilovolts to meet growing needs in the Ottawa area. Special construction techniques and winter scheduling arrangements deferred to recreation and tourism in the Jones Falls and Stony Swamp areas.

**Transmission Stations** — Electricity consumption in Toronto, Hamilton, and Barrie went up by as much as 13 per cent. We're updating and constructing transformer stations to meet these needs. We began work on the Longwood Transformer Station near London, a high capacity terminal point for lines from the Bruce and Nanticoke Generating Stations. Hydro also has projects in Ottawa, in Scarborough, and near Hamilton.



*Today in our prosperity, we depend upon electricity for our very way of life.*





*Ontario Hydro will continue, around the clock, to contribute to all that we strive for as a Province.*

**Research Division** — The corporate emphasis on efficiency and the environment are not new to Research Division, which has always been on the leading edge of technological advances in those areas.

Tests, evaluations and demonstrations on energy efficiency were carried out for more than 60 Ontario companies and industrial customers. The evaluations, which ranged from welding jewelry with lasers to treating waste with microwaves, help customers reduce production costs or lower their demand for power. In the residential sector, a survey of 1000 homes was started to determine potential energy savings on older homes, energy efficient appliances, and high-tech window designs.

Research is also committed to the rehabilitation of aging plant. On the environmental side, the division continues to investigate options for controlling acid gas emissions, while pursuing pioneering work on the "greenhouse effect". Research has also provided technical support to the Dam Assessment Program.

#### HYDRO'S PEOPLE

**Health And Safety** — During the 1980s, Hydro has maintained a high standard of safety. In the five years prior to 1988, there was one fatality. That compares with 15 and 23 in the two previous five-year periods. We regret to report there was an employee fatality in 1988, and an electrical burn that resulted in permanent disability to another employee. These accidents remind us of the need for constant vigilance and they strengthen our resolve to make Hydro a safer place to work.

The Bruce Heavy Water Plant continued to build its corporate record for continuous hours worked without a disabling injury, extending the record to 5.6 million hours.

**Affirmative Action / Employment Equity** — "Diversity Creates Energy" is a good working slogan for the Affirmative Action / Employment Equity Department.

In many ways Hydro is moving toward employment equity for women, visible minorities, the disabled, and native people. More women are being promoted. In 1988, the department's training package "Selection Without Bias" became the standard selection tool for all supervisors.

Women are gradually entering non-traditional fields. One of our big successes for 1988 is our all-women line-crew. Hundreds of women applied and we now have a team of four doing a job that is traditionally difficult for men. We found that women in this job had to develop new ways of working safely and efficiently within their physical restrictions. These new more efficient methods are now used by male crews too.

In 1988, planning for our massive Employment Equity survey went into action. We are embarking upon a data-gathering survey of all employees to determine the representation of designated groups, an essential first step toward employment equity.

**Sale of Hydro's Original Buildings** — As a result of the 1988 sale of our buildings at 610 and 620 University Avenue for use by the Ontario Cancer Institute, we have acquired land for a new office building in North York for occupation in 1993.

# ONTARIO HYDRO MAJOR GENERATING STATIONS

24

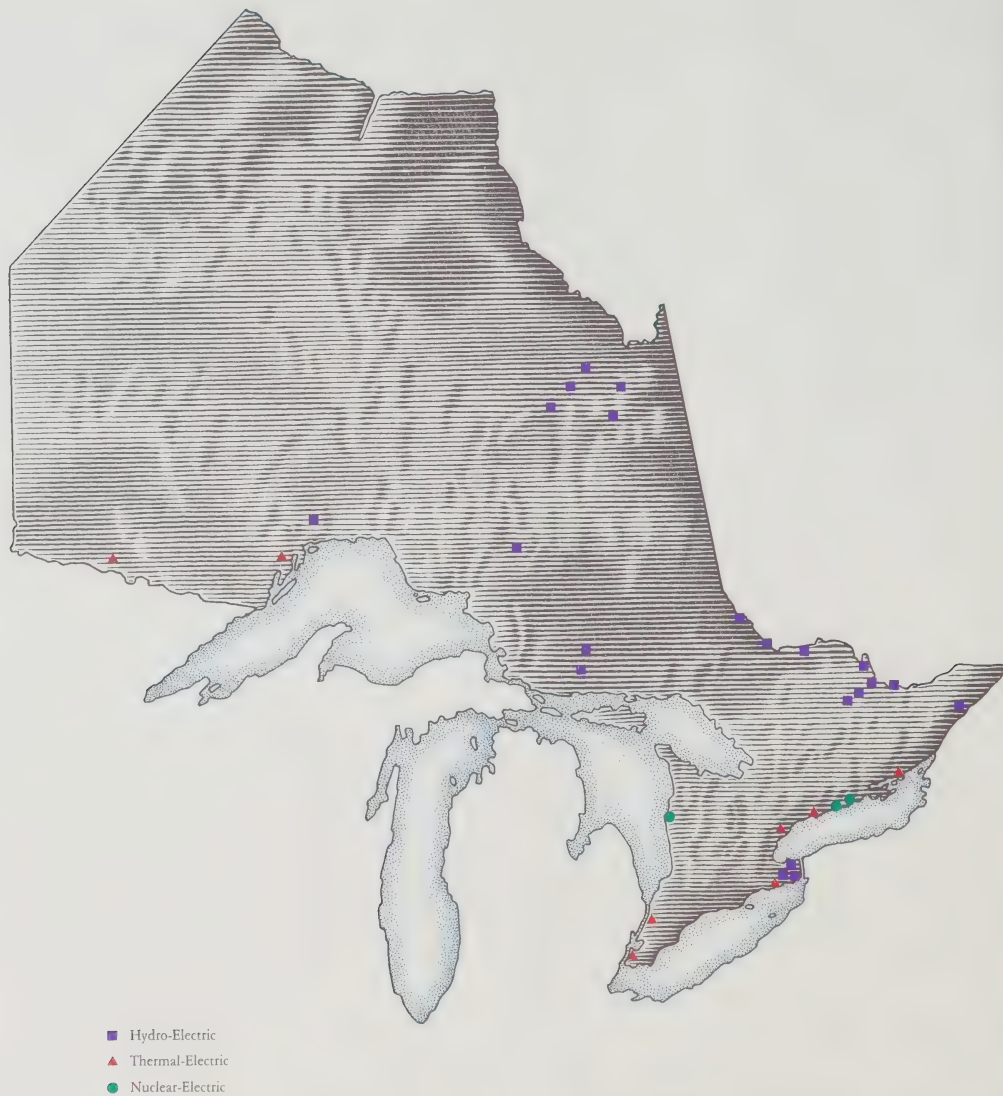


Figure 1



■ In Service Parallel Generators  
● Committed and Proposed  
○ Parallel Generators



ONTARIO HYDRO MAJOR GENERATING STATIONS  
NON UTILITY GENERATION DIVISION PROJECTS

24



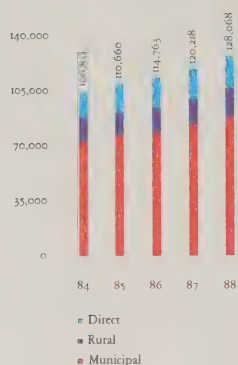


## FINANCIAL REVIEW OF ONTARIO HYDRO

for the year ended December 31, 1988

### PRIMARY ENERGY

Millions of kilowatt-hours



### FINANCIAL HIGHLIGHTS

Ontario Hydro's total revenues for 1988 came to \$5,813 million, \$533 million higher than in 1987. Approximately \$288 million of this increase came from a greater volume of electricity sales, and \$245 million from the 1988 rate increase. Total operating costs for 1988, including financing charges, amounted to \$5,187 million, an increase of \$178 million over 1987. This increase was due primarily to higher operating and maintenance costs, partially offset by lower foreign exchange costs. Net income for 1988 was \$626 million compared with \$271 million for 1987.

Cash provided from operations and available for investment in fixed assets was \$1,368 million for 1988. The capital expenditures for investment in fixed assets during 1988 amounted to \$2,689 million.

### RESULTS OF OPERATIONS

#### Revenues

Primary revenues for 1988 amounted to \$5,657 million, an increase of \$573 million or 11.3 per cent over 1987. Electricity sales to municipal utilities, rural retail and direct industrial customers totalled 128,068 million kilowatt-hours. The volume of primary electricity use grew by 6.5 per cent in 1988, because of continued economic growth in Ontario and higher peak demand in both winter and summer. Electricity use by rural retail customers rose more than the use by municipal utilities and direct customers. The chart shows actual electricity consumption by major customer category. The overall rise in consumption for 1988 was markedly higher than Ontario's average annual growth rate of 4.9 per cent experienced over the last five years.

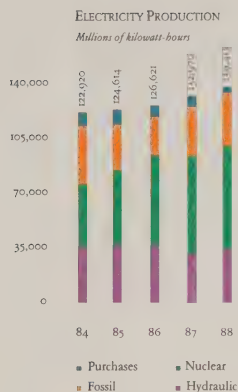
The 1988 electricity rates for primary customers increased 4.7 per cent on average. The average increase for municipal utilities was 4.7 per cent, for rural retail 4.4 per cent and for direct industrial customers 5.2 per cent. The rural rate increase takes into account \$90 million in assistance provided by all electricity consumers in the province to reduce the electricity bills of year-round rural residential customers.

Secondary revenues for 1988, mainly from exporting electricity to utilities in United States, came to \$156 million. Compared with 1987, this represents a decrease of \$40 million or 20.4 per cent. This decrease is due primarily to sales being constrained to conserve coal inventories for Ontario customers' energy needs and to ensure acid gas emissions were below 1987 levels.

Over the last five years, Ontario Hydro has sold approximately 37,000 million kilowatt-hours of electricity to utilities in the United States but only after the needs of customers in Ontario had been met. These sales have earned approximately \$1,371 million in secondary revenues. The net benefit to Ontarians was \$519 million for the period 1984 through 1988, and \$45 million in 1988. This benefit helped Ontario Hydro to keep electricity rates lower for Ontario customers.

#### Major Electricity Production Resources

Ontario Hydro responds to the energy demands of its customers by supplying electricity from a number of different sources. Hydraulic generating stations, which are relatively inexpensive to operate, have traditionally provided a major part of the electricity energy generated by Ontario Hydro. With most major accessible sites in the province already developed, hydraulic generation, as a percentage of total generation, has gradually decreased



over the past few years. On the other hand, in order to meet the total energy needs, the Corporation has increased its emphasis on nuclear generation. The other major source of generation of electricity is fossil generation. The increased nuclear generating capacity reduces the need to operate coal-fired generating units which have higher fuelling costs. However, the fossil-fuelled units will continue to be required during periods of higher demand, when demand cannot be satisfied by less expensive generation. The production resources from 1984 through 1988, highlighting the changes in volume and generation mix, are shown in the chart. Nuclear stations supplied 48.4 per cent of the total energy to the system in 1988. Hydraulic stations supplied 25.2 per cent and fossil-fuelled generation provided 24.9 per cent. Purchases of power from interconnected utilities provided the remaining 1.5 per cent. In 1987, electric energy from nuclear generation, hydraulic generation and fossil-fuelled generation supplied 47.5 per cent, 23.8 per cent and 23.9 per cent, respectively, of the total energy to the system. A breakdown of the annual average cost per kilowatt-hour of energy by the major generating sources is shown in the Five-Year Summary of Financial and Operating Statistics (see page 48).

#### Fuel and Fuel related Costs

In 1988, fuel and related costs such as water rentals, power purchased, and the nuclear agreement—payback were 2.1 per cent lower than in 1987.

The 1988 fuel costs for coal, uranium, and oil came to \$1.17 million or 0.6 per cent lower than in 1987. The impact of the lower unit cost of coal consumed was offset

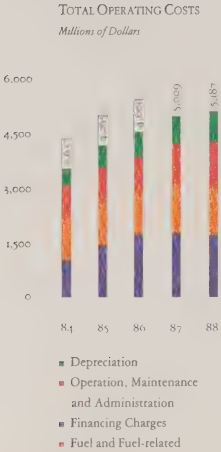
by the costs associated with the increased amount of energy generated to meet the growth in primary energy sales.

Water rentals, the payments Ontario Hydro made primarily to the Province of Ontario for the use of provincial waters in its hydraulic plants amounted to \$96 million in 1988, an increase of \$6 million over 1987. This increase reflects the effects of the increase in hydraulic generation in 1988 over 1987, and the impact of the increase in water rental rates.

In 1988, Ontario Hydro purchased \$57 million worth of electricity from neighbouring utilities, a decrease of \$60 million from 1987. Ontario Hydro buys electricity when it is economical to do so and during periods of peak demand or in emergencies.

In 1983, units 1 and 2 of the Pickering Nuclear Generating Station were taken out of operation to replace existing pressure tubes. Unit 1 returned to operation in October 1987 and unit 2 in November 1988. The maintenance and overhead costs during the shutdown period have been included in the payback calculation according to the Pickering Payback Agreement. The negative payback amounts accumulated during this shutdown period are to be offset against future positive payback amounts, otherwise payable to Atomic Energy of Canada Limited and the Province of Ontario, over the remaining term of the Agreement. In 1987, \$23 million of negative payback was credited against operating costs, and in 1988, the payback amount of \$11 million was charged to operations.





**Operation, Maintenance and Administration**

In 1988, operation, maintenance and administration costs amounted to \$1,354 million, an increase of \$204 million over 1987. This increase of 17.7 per cent is related primarily to cost escalation in labour and other costs, and additional facilities placed in service. The transmission and distribution system work-load grew in 1988, as reflected in an increase of approximately 3 per cent in the number of customers and an increase of about 1 per cent in the kilometres of rural lines maintained.

**Depreciation**

The depreciation charged to operations totalled \$811 million in 1988, \$88 million or 12.2 per cent higher than in 1987. Contributing to this increase were a full year's depreciation of Bruce unit 8, which was placed in service in 1987, and increased provisions for decommissioning costs. The increase in this provision is due primarily to the updated estimates of the costs to decommission nuclear generating stations.

**Financing Charges**

Financing charges are comprised of interest charged to operations and foreign exchange costs. Interest charged to operations represents gross interest reduced by capitalized interest and by interest earned on investments. By capitalizing interest, costs are properly allocated between current and future customers. Foreign exchange represents mainly the amortization of gains or losses on the principal amount of foreign debt and the net exchange loss on foreign transactions other than foreign debt.

Gross interest costs for 1988 amounted to \$2,845 million, an increase of \$101 million or 3.7 per cent over 1987. The primary reason for this increase is related to the additional funds borrowed during the year to finance the construction of Darlington Nuclear Station which is needed to meet future demand. This increase was partially offset by the effect of the stronger Canadian dollar relative to the United States dollar on foreign currency interest payments, as well as refinancing debt that matured during the year at lower interest rates.

Interest charged to operations amounted to \$1,740 million in 1988, \$38 million or 2.2 per cent higher than in 1987. The increase resulted primarily from the full year's impact of an additional nuclear generating station placed in service in 1987. The in-service date is the time from which interest is no longer capitalized and is charged to operations.

Foreign exchange costs amounted to \$1 million in 1988, a decrease of \$125 million from 1987. The primary factor contributing to the decrease was the rise in the Canadian dollar relative to the United States dollar.

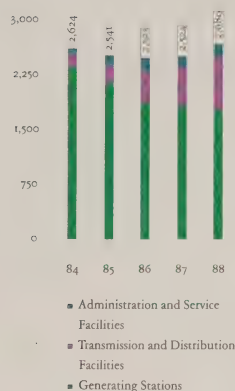
**TOTAL OPERATING COSTS**

The chart shows the major operating costs for the period 1984 through 1988.

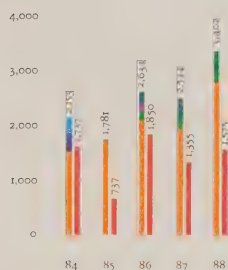
**NET INCOME/FINANCIAL INDICATORS**

Ontario Hydro's net income was \$626 million in 1988, compared to \$271 million in 1987. The corporation's main financial indicators are the cash flow coverage, interest coverage and debt ratios. The cash flow coverage for 1988 was 1.19, the highest level in recent years. The level of interest coverage for 1988 was 1.23 and for 1987, 1.10. The debt ratio at the end of 1988 improved to .829 from the 1987 ratio of .836. The financial position of Ontario Hydro remains strong.

INVESTMENT IN FIXED ASSETS  
DURING THE YEAR  
*Millions of Dollars*



CASH PROVIDED FROM  
FINANCING  
*Millions of Dollars*



Cash Provided from External Borrowings:

- Short-Term Notes Payable Issued for Debt Management Purposes
- Other Debt Issues
- Canada Pension Plan
- Eurodollar Issues
- U.S. Issues
- Canadian Issues
- Cash Provided from External Borrowings – Net of Retirement

## CAPITAL EXPENDITURES AND FINANCING

### Investment in Fixed Assets

Ontario Hydro invests in fixed assets to meet expected growth in the demand for electricity, to replace existing assets with facilities that are more economical, and to meet regulatory requirements. The total assets of the Corporation at the end of 1988 were \$34,358 million and of this amount, 87 per cent consists of fixed assets in service or under construction. This relatively high percentage reflects the capital intensive nature of Ontario Hydro's business.

The investment in fixed assets during 1988 totalled \$2,689 million. During the year, capital expenditures of \$1,331 million went toward the construction of facilities at Darlington. These four nuclear generating units are expected to be placed in service over the period 1989 to 1992. In addition, the 1988 capital expenditures reflect the continued emphasis on investment in the transmission and distribution facilities to keep the quality and reliability of service high. During 1988, \$754 million went toward constructing major transmission and distribution facilities, such as the 500 kilovolt transmission lines in eastern and southwestern Ontario and the Longwood Transformer Station.

The annual investments in fixed assets from 1984 through 1988 are shown in the chart. Over this period, the annual capital expenditures have been relatively level, with the average annual amount being about \$2,600 million. While there has been a general decrease over this period in the level of construction activity for generating facilities as the major projects are being completed, this decrease has been offset by the higher level of investment in the transmission and distribution facilities.

### Financing

The cash required by Ontario Hydro to finance the investment in fixed assets comes from two major sources: operations and external borrowings. For 1988, operations pro-

vided \$1,368 million and borrowings \$1,575 million. The cash from financing is made up of cash from the issuance of long-term debt and the change in the level of short-term notes payable issued for debt management purposes, less the amount of cash used to retire long-term debt.

The proceeds from bonds that Ontario Hydro sold to the public during 1988 amounted to \$2,602 million. In addition, bonds issued to the Province of Ontario provided a further \$551 million. The source of the funds provided by the Province was the Canada Pension Plan. In total, there were twenty-two Canadian issues with an average coupon interest rate of 10.0 per cent for an average term of 9.3 years. For the same period in 1987, the average coupon interest rate was 9.6 per cent for the average term of 8.0 years. In addition, proceeds of \$249 million were received from the issuance of long-term notes.

Cash provided from financing from 1984 through 1988 is shown in the chart. Since 1985, financing requirements have been met entirely from the Canadian public market and from Canada Pension Plan funds, thereby not incurring new foreign exchange exposure.

Cash amounting to \$1,191 million was used to retire maturing long-term debt in 1988, compared with \$1,096 million in 1987. In addition, during 1988, cash amounting to \$636 million was used to redeem debt prior to maturity, compared with \$83 million in 1987. Of this amount, \$146 million was used to redeem United States dollar bond issues called prior to maturity.

## MANAGEMENT REPORT

### MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL REPORTING

The accompanying financial statements of Ontario Hydro are the responsibility of management and have been prepared in accordance with accounting principles generally accepted in Canada, applied on a basis consistent with that of the preceding year. The significant accounting policies followed by Ontario Hydro are described in the Summary of Significant Accounting Policies. The preparation of financial statements necessarily involves the use of estimates based on management's judgment, particularly when transactions affecting the current accounting period cannot be finalized with certainty until future periods. The financial statements have been properly prepared within reasonable limits of materiality and in light of information available up to March 13, 1989. The information presented elsewhere in the Annual Report is consistent with that in the financial statements.

Management maintains a system of internal controls designed to provide reasonable assurance that the assets are safeguarded and that reliable financial information is available on a timely basis. The system includes formal policies and procedures and an organizational structure that provides for appropriate delegation of authority and segregation of responsibilities. An internal audit function independently evaluates the effectiveness of these internal controls on an ongoing basis and reports its findings to management and to the Audit Committee of the Board of Directors.

The financial statements have been examined by

Clarkson Gordon, independent external auditors appointed by the Lieutenant Governor in Council of Ontario. The external auditors' responsibility is to express their opinion on whether the financial statements are fairly presented in accordance with generally accepted accounting principles. The Auditors' Report, which appears below, outlines the scope of their examination and their opinion.

The Board of Directors, through the Audit Committee, is responsible for ensuring that management fulfills its responsibilities for financial reporting and internal controls. The Audit Committee meets periodically with management, the internal auditors and the external auditors to satisfy itself that each group has properly discharged its respective responsibility, and to review the financial statements before recommending approval by the Board of Directors. The external auditors have direct and full access to the Audit Committee, with and without the presence of management, to discuss their audit and their findings as to the integrity of Ontario Hydro's financial reporting and the effectiveness of the system of internal controls.

On behalf of Management



Chairman and President  
Toronto, Canada,  
March 13, 1989.



Senior Vice-President,  
Finance and Services

### AUDITORS' REPORT

To the Board of Directors of Ontario Hydro:

We have examined the statement of financial position of Ontario Hydro as at December 31, 1988 and the statements of operations, accumulated debt retirement appropriations, reserve for stabilization of rates and contingencies and source of cash used for investment in fixed assets for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these financial statements present fairly the financial position of Ontario Hydro as at December 31, 1988 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.



Toronto, Canada,  
March 13, 1989.

Chartered Accountants

The accompanying financial statements have been prepared in accordance with accounting principles generally accepted in Canada, applied on a basis consistent with that of the preceding year. The significant accounting policies followed by Ontario Hydro are described below.

#### **Rate Setting**

Ontario Hydro has broad powers to generate, supply and deliver electric power throughout the Province of Ontario. The Corporation operates under the Power Corporation Act and is subject to provisions of the Ontario Energy Board Act.

Under the provisions of the Power Corporation Act, the price payable by municipal corporations for power is the cost of supplying the power. Such cost is defined in the Act to include the cost of operating and maintaining the system, depreciation, interest, and the amounts appropriated for debt retirement and stabilization of rates and contingencies. The debt retirement appropriation is the amount required under the Act to accumulate on a sinking fund basis over 40 years a sum equal to the debt incurred for the cost of the fixed assets in service. The appropriation for, or withdrawal from, the stabilization of rates and contingencies reserve is an amount established to maintain a sound financial position and to stabilize the effect of cost fluctuations.

Under the provisions of the Ontario Energy Board Act, a public hearing before the Ontario Energy Board is required in respect of any changes in electricity rates proposed by Ontario Hydro which affect its municipal utilities, direct industrial customers, or, if the Minister of Energy so directs, rural retail customers. The Ontario Energy Board submits its recommendations to the Minister of Energy. After considering the recommendations of the Ontario Energy Board, the Board of Directors of Ontario Hydro, under the authority of the Power Corporation Act, establishes the electricity rates to be charged to customers.

If the Board of Directors specifies an amount related to a certain transaction be included in future electricity rates that, in accordance with the accounting policies summarized below, would be charged or credited to operations in the current year, then this amount is deferred and amortized to future operations on a basis consistent with its inclusion in rates.

#### **Fixed Assets**

Fixed assets in service include operating facilities and non-operating reserve facilities. Construction in progress includes fixed assets under construction and heavy water held for use in nuclear generating stations under construction.

Fixed assets are capitalized at cost which comprises material, labour, engineering costs, and the costs of training initial operating staff for new facilities as well as overheads, depreciation on service equipment, and interest applicable to capital construction activities. In the case of generation facilities, the cost also includes the net cost of commissioning, and for nuclear generation, the cost of heavy water. The net cost of commissioning is the cost of start-up less the value attributed to energy produced by generation facilities during their commissioning period. The cost of heavy water comprises the direct cost of production and applicable overheads, as well as interest and depreciation on the heavy water production facilities and the estimated removal costs of these facilities. For multi-unit facilities, a proportionate share of the cost of common facilities is placed in service with each major operating unit. Leases which transfer the benefits and risks of ownership of assets to Ontario Hydro are capitalized.

Interest is capitalized on construction in progress at rates (1988—10.8 per cent, 1987—11.4 per cent) which approximate the average cost of long-term funds borrowed



in the years in which expenditures have been made for fixed assets under construction. If the construction period of a project is extended and the construction activities are continued, interest is capitalized during the period of extension provided that the project has a reasonable expectation of being completed.

If a project is cancelled or deferred indefinitely with a low probability of construction being resumed, all costs including the costs of cancellation are written off to operations.

If fixed assets are removed from operations and mothballed for future use, termed non-operating reserve facilities, the costs of mothballing are charged to operations.

**Depreciation**

The capital costs of fixed assets in service are depreciated on a straight-line basis. Depreciation rates for the various classes of assets are based on their estimated service lives. Major components of generating stations are depreciated over the lesser of the service life expectancy of the component or the remaining service life of the associated generating station.

The estimated service lives of assets in the major classes are:

Generating stations – hydraulic	– 65 to 100 years
– fossil	– 30 to 35 years
– nuclear	– 40 years
Heavy water	– over the period ending in the year 2040
Transmission and distribution facilities	– 20 to 55 years
Heavy water production facilities	– 20 years
Administration and service facilities	– 5 to 65 years

In accordance with group depreciation practices, for normal retirements the cost of fixed assets retired is charged to accumulated depreciation with no gain or loss being reflected in operations. However, gains and losses on sales of fixed assets, and losses on premature retirements are charged to operations in the year incurred as adjustments to depreciation expense.

When the costs of removal less residual value, termed removal costs, on retirements of fixed assets can be reasonably estimated and are significant, provisions for these costs, except for those related to heavy water production facilities, are charged to depreciation expense on an annuity basis over the remaining service life of the related fixed assets. For heavy water production facilities, provisions for removal costs are charged to heavy water production costs on a straight-line basis over the remaining service life of the related facilities. Other removal costs are charged to depreciation expense as incurred. Removal costs include the estimated costs of decommissioning nuclear and fossil stations and heavy water production facilities, and the estimated costs of removing certain nuclear reactor fuel channels.

The estimated service lives of fixed assets and the significant assumptions underlying the estimates of fixed asset removal costs are subject to periodic review. Any changes arising out of such a review are implemented on a remaining service life basis from the year the changes can be first reflected in electricity rates.

Non-operating reserve facilities are amortized so that any estimated loss in value is charged to depreciation expense on a straight-line basis over their expected non-operating period.

#### **Unamortized advances for fuel supplies**

As part of its program to ensure the adequate supply of fuels for its generating stations, Ontario Hydro has entered into long-term fuel supply contracts. Where these contracts require Ontario Hydro to make payments for pre-production costs to suppliers in advance of the fuel delivery, these payments and associated costs, including interest, are carried in the accounts as unamortized advances for fuel supplies. The advances are amortized to fuel inventory as the fuels are delivered.

#### **Fuel for electric generation**

Fuel used for electric generation comprises the average inventory costs of fuel consumed, charges for commissioning energy produced, and provisions for disposal of nuclear fuel irradiated during the period. The inventory cost of fuel consumed comprises fuel purchases, transportation and handling costs, and the amortization of advances for fuel supplies. Transportation costs include charges for interest and depreciation on railway equipment owned by Ontario Hydro. The charges for commissioning energy produced during the period represent the incremental operating and fuel costs of producing the same quantity of energy at generating units displaced because of the commissioning activity. The costs for disposal of nuclear fuel irradiated in each period are charged to operations based on estimated future expenditures and interest accumulating to the estimated date of disposal. Estimates of expenditures, interest and escalation rates, and the date of disposal are subject to periodic review. Adjustments resulting from changes in estimates are charged to operations on an annuity basis over the period from the year the changes can be first reflected in electricity rates to the estimated in-service date of the disposal facility.

#### **Foreign currency translation**

Current monetary assets and liabilities in foreign currencies are translated to Canadian currency at year-end rates of exchange and the resultant exchange gains or losses are credited or charged to operations. Long-term debt payable in foreign currencies is translated to Canadian currency at year-end rates of exchange. Resulting unrealized exchange gains or losses are deferred and included in unamortized debt costs, and are amortized to operations on an annuity basis over the remaining life of the related debt.

Foreign exchange gains or losses on hedges of long-term debt payable in foreign currencies are deferred and included in unamortized debt costs. The deferred gains or losses related to principal payments are amortized to operations on an annuity basis over the remaining period through to the year in which the hedged principal payments are due. The deferred gains or losses related to interest payments are credited or charged to operations in the year in which the hedged interest payments are due.

Foreign exchange gains or losses on early redemption of long-term debt are deferred and included in unamortized debt costs if the exposure in the foreign currency related to the redeemed debt is not reduced as a result of the refinancing of the redeemed debt in the same currency. These deferred gains or losses are amortized on an annuity basis over the period to the original maturity date of the redeemed debt. If the foreign currency exposure is reduced as a result of the early redemption of debt, the resulting foreign exchange gains or losses related to the redeemed debt are credited or charged to operations.

#### Unamortized debt costs

Unamortized debt costs include the unamortized amounts related to unrealized foreign exchange gains or losses resulting from the translation of foreign currency long-term debt, foreign exchange gains or losses on hedges, foreign exchange gains or losses on the early redemption of long-term debt, discounts or premiums arising from the issuance of debt or the acquisition of debt prior to maturity, and discounts or premiums accrued on foreign currency hedges.

Debt discounts or premiums arising from the issuance of debt are amortized over the period to maturity of the debt. Discounts or premiums on debt acquired prior to the date of maturity are amortized over the period from the acquisition date to the original maturity date of the debt. Discounts or premiums on foreign currency hedges are credited or charged to operations over the terms of the individual hedges.

#### Nuclear agreement – Pickering units 1 and 2

Ontario Hydro, Atomic Energy of Canada Limited and the Province of Ontario are parties to a joint undertaking for the construction and operation of units 1 and 2 of Pickering Nuclear Generating Station, with ownership of these units being vested in Ontario Hydro. Contributions to the capital cost by Atomic Energy of Canada Limited and the Province of Ontario amounted to \$258 million and these have been deducted in arriving at the value of fixed assets in service in respect of Pickering units 1 and 2. Ontario Hydro is required to make monthly payments, termed “payback”, until the year 2003 to each of the parties in proportion to their capital contributions. Payback represents in a broad sense the net operational advantage of

having the power generated by Pickering units 1 and 2 as compared with coal-fired units similar to Lambton units 1 and 2.

During the 1983 through 1988 shutdown period for replacement of pressure tubes in Pickering units 1 and 2, the payback calculations resulted in negative payback amounts. These amounts have been credited against the cost of operations over the shutdown period and the accumulated amounts, plus interest, are included in the accounts as long-term accounts receivable. The accumulated negative payback amounts, plus interest, are to be offset against future positive payback amounts payable over the remaining term of the Agreement to Atomic Energy of Canada Limited and to the Province of Ontario, commencing with the return to operation of the last of the two units in November 1988.

#### Pension plan

The pension plan is a contributory, defined benefit plan covering all regular employees of Ontario Hydro. Ontario Hydro is responsible for all deficiencies and surpluses in the pension plan.

Pension costs for accounting purposes are actuarially determined based on the assumptions that reflect management’s best estimate of the effect of future events on the actuarial present value of accrued pension benefits, and the valuation of pension plan assets using a five-year market value average. Pension plan surpluses and deficiencies are amortized on an annuity basis over the expected average remaining period of service of the employees covered by Ontario Hydro’s pension plan.

#### Research and development

Research and development costs are charged to operations in the year incurred, except for those related directly to the design or construction of a specific capital facility which are capitalized as part of the facility.

## STATEMENT OF OPERATIONS

for the year ended December 31, 1988	1988	1987
	<i>millions of dollars</i>	
<b>Revenues</b>		
Primary power and energy		
Municipal utilities	3,824	3,441
Rural retail customers	1,103	968
Direct industrial customers	730	675
	5,657	5,084
Secondary power and energy (note 1)	156	196
	5,813	5,280
<b>Costs</b>		
Operation, maintenance and administration	1,354	1,150
Fuel used for electric generation	1,117	1,124
Water rentals (note 2)	96	90
Power purchased	57	117
Nuclear agreement—payback (note 3)	11	(23)
Depreciation (note 4)	811	723
	3,446	3,181
<b>Income before financing charges</b>	2,367	2,099
Interest (note 5)	1,740	1,702
Foreign exchange (note 6)	1	126
	1,741	1,828
<b>Net income</b>	626	271
<b>Appropriation for (withdrawal from):</b>		
Debt retirement	341	319
Stabilization of rates and contingencies	285	(48)
	626	271

See accompanying summary of significant accounting policies and notes to financial statements.



## STATEMENT OF FINANCIAL POSITION

as at December 31, 1988	1988	1987
	<i>millions of dollars</i>	
<b>Assets</b>		
<b>Fixed assets (note 7)</b>		
Fixed assets in service	26,918	25,788
Less accumulated depreciation	6,289	5,581
	20,629	20,207
Construction in progress	9,346	7,779
	29,975	27,986
<b>Current assets</b>		
Cash and temporary investments	312	89
Accounts receivable	663	584
Fuel for electric generation (note 8)	1,113	1,039
Materials and supplies, at cost	332	287
	2,420	1,999
<b>Other assets</b>		
Unamortized debt costs	324	940
Unamortized advances for fuel supplies (note 9)	755	777
Unamortized deferred costs (note 10)	401	473
Long-term accounts receivable and other assets (see note 3)	483	482
	1,963	2,672
	34,358	32,657

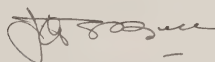
See accompanying summary of significant accounting policies and notes to financial statements.

	1988	1987
	<i>millions of dollars</i>	
<b>Liabilities</b>		
<b>Long-term debt (note 11)</b>	24,240	23,862
<b>Current liabilities</b>		
Accounts payable and accrued charges	664	624
Short-term notes payable	500	502
Accrued interest	714	705
Long-term debt payable within one year	1,665	1,202
	4,543	3,033
<b>Other liabilities</b>		
Long-term accounts payable and accrued charges	216	183
Accrued fixed asset removal and irradiated fuel disposal costs (note 12)	771	617
	987	800
<b>Contingencies (notes 9, 10 and 14)</b>		
<b>Equity</b>		
Accumulated debt retirement appropriations	3,570	3,229
Reserve for stabilization of rates and contingencies	1,891	1,606
Contributions from the Province of Ontario as assistance for rural construction	127	127
	5,588	4,962
	34,358	32,657

On behalf of the Board



Chairman and President



Vice-Chairman

Toronto, Canada,  
March 13, 1989.

## STATEMENT OF ACCUMULATED DEBT RETIREMENT APPROPRIATIONS

for the year ended December 31, 1988	<i>Power District (Rural Retail and Direct Industrial Customers)</i>		<i>Totals</i>	
	<i>Municipal Utilities</i>		<i>1988</i>	<i>1987</i>
	<i>millions of dollars</i>			
Balances at beginning of year	2,245	984	3,229	2,910
Appropriation	233	108	341	319
Balances at end of year	2,478	1,092	3,570	3,229

## STATEMENT OF RESERVE FOR STABILIZATION OF RATES AND CONTINGENCIES

for the year ended December 31, 1988	<i>Held for the benefit of all customers</i>	<i>Held for the benefit of (or recoverable from) certain groups of customers</i>		<i>Totals</i>	
		<i>Municipal Utilities</i>	<i>Rural Retail Customers</i>	<i>Direct Industrial Customers</i>	
					<i>1988 1987</i>
	<i>millions of dollars</i>				
Balances at beginning of year	1,653	1	(36)	(12)	1,606 1,654
Appropriation (withdrawal)	253	—	21	11	285 (48)
Balances at end of year	1,906	1	(15)	(1)	1,891 1,606

See accompanying summary of significant accounting policies and notes to financial statements.

# STATEMENT OF SOURCE OF CASH USED FOR INVESTMENT IN FIXED ASSETS

for the year ended December 31, 1988	1988	1987
	<i>millions of dollars</i>	
Cash provided from operations (note 13)	1,368	1,204
Cash provided from financing		
Long-term debt issued	3,402	2,284
Change in short-term notes payable issued for debt management purposes— increase	—	250
	3,402	2,534
Less long-term debt retired	1,827	1,179
Cash provided from financing	1,575	1,355
Cash used for investment in other assets (note 13)	(45)	(149)
Cash provided from operations, financing and other activities	2,898	2,410
Changes in cash and cash equivalents		
—(increase) decrease (note 13)	(225)	42
Cash used for investment in fixed assets	2,673	2,452
Changes in accounts payable and accrued charges affecting investment in fixed assets— increase	16	72
Investment in fixed assets (note 13)	2,689	2,524

See accompanying summary of significant accounting policies and notes to financial statements.



## NOTES TO FINANCIAL STATEMENTS

### 1. Secondary power and energy

Secondary power and energy revenues include \$153 million (1987—\$194 million) from sales of electricity to United States utilities.

### 2. Water rentals

Water rentals are the amounts paid primarily to the Province of Ontario for the use of water for hydraulic generation.

### 3. Nuclear Agreement—Payback

In accordance with the Nuclear Agreement which is described in the Summary of Significant Accounting Policies, the negative payback amounts accumulated during the 1983 through 1988 shutdown period for replacement of pressure tubes in Pickering Nuclear Generating Station units 1 and 2 are to be offset against future positive payback amounts payable to Atomic Energy of Canada Limited and the

Province of Ontario after the units return to operation. Pickering unit 1 returned to operation in 1987 and unit 2 in 1988. As of December 31, 1988, the accumulated negative payback, plus interest, amounted to \$296 million (1987—\$279 million) and is included in "long-term accounts receivable and other assets."

### 4. Depreciation

	1988	1987
	<i>millions of dollars</i>	
Depreciation of fixed assets in service	774	717
Amortization of deferred costs	40	40
Fixed asset removal costs		
—provision for fuel channel removal costs	39	35
—provision for decommissioning costs	34	17
—other removal costs	25	14
	<u>912</u>	<u>823</u>
Less:		
Depreciation charged to—heavy water production	51	51
—construction in progress	44	38
—fuel for electric generation	2	2
Net gain on sales of fixed assets	4	9
	<u>101</u>	<u>100</u>
	<u>811</u>	<u>723</u>

### 5. Interest

	1988	1987
	<i>millions of dollars</i>	
Interest on bonds, notes, and other debt	2,780	2,694
Interest on accrued fixed asset removal and irradiated fuel disposal costs	65	50
	<u>2,845</u>	<u>2,744</u>
Less:		
Interest charged to—construction in progress	836	772
—heavy water production	86	98
—fuel for electric generation	90	108
Interest earned on investments	93	64
	<u>1,105</u>	<u>1,042</u>
	<u>1,740</u>	<u>1,702</u>

**6. Foreign exchange**

	1988	1987
	<i>millions of dollars</i>	
Amortization of foreign exchange gains and losses	(61)	93
Net exchange loss on other foreign transactions	62	33
	1	126

**7. Fixed assets**

	1988		
	<i>Assets in Service</i>	<i>Accumulated Depreciation</i>	<i>Construction in Progress</i>
	<i>millions of dollars</i>		
Generating stations—hydraulic	1,899	628	33
—fossil	3,707	1,447	66
—nuclear	10,805	1,474	7,258
Heavy water	2,447	252	1,140
Transmission and distribution	5,663	1,511	730
Heavy water production facilities	1,126	445	—
Administration and service facilities	1,271	532	119
	26,918	6,289	9,346

	1987		
	<i>Assets in Service</i>	<i>Accumulated Depreciation</i>	<i>Construction in Progress</i>
	<i>millions of dollars</i>		
Generating stations—hydraulic	1,863	599	41
—fossil	3,618	1,338	47
—nuclear	10,450	1,188	6,162
Heavy water	2,432	210	949
Transmission and distribution	5,130	1,388	516
Heavy water production facilities	1,128	393	—
Administration and service facilities	1,167	465	64
	25,788	5,581	7,779

Fossil generating stations in service include non-operating reserve facilities. As at December 31, 1988, the capital cost and accumulated depreciation of these non-operating fossil-fuelled facilities amounted to \$387 million and \$313 million, respectively (1987—\$488 million and \$352 million, respectively). Substantially all of the undepreciated cost of these facilities is related to the one unit (1987—two units) at the Lennox Generating Station which, based on current forecasts, is expected to return to operation by the early 1990's. In 1988, one unit at Lennox returned to operation.

A major portion of the construction in progress as at December 31, 1988, relates to the construction program for the Darlington Nuclear Generating Station. The costs associated with this construction program, including heavy water, amounted to \$8,209 million as at December 31, 1988 (1987—\$6,766 million). The four generating units at Darlington are planned to be placed in-service over the period 1989 through 1992 and will provide 3,524 megawatts of dependable capacity. The estimated cost to complete the Darlington construction program is \$3,175 million, including cost escalation and

interest of approximately \$1,770 million. Cost escalation and interest are forecast to average 5% and 10% per year, respectively, over the period 1989 to 1992. Because of the uncertainties associated with long construction lead times and planned in-service dates, this estimated cost to complete is subject to change.

In 1988, Ontario Hydro exchanged real estate property at 610 and 620 University Avenue, Toronto, Canada for property at 5000 Yonge Street, North York, Canada owned by the Province of Ontario. In addition, Ontario Hydro paid a cash adjustment of approximately \$17 million to the Province of Ontario, representing the difference between the fair market values of the properties. The transaction was an exchange of like-use assets which were not held for resale in the ordinary course of business. Accordingly, the property at 5000 Yonge Street has been recorded in the accounts of Ontario Hydro at the net book value of the property at 610 and 620 University Avenue plus the cash adjustment, and no gain or loss has been credited or charged to operations.

8. Fuel for electric generation	1988	1987
	millions of dollars	
Inventories—uranium	668	643
—coal	418	381
—oil	27	15
	1,113	1,039

9. Unamortized advances for fuel supplies	1988	1987
	millions of dollars	
Uranium—Rio Algom Limited	414	422
—Denison Mines Limited	334	345
	748	767
Coal	7	10
	755	777

Unamortized advances for fuel supplies are recovered as fuel is delivered. Over the next five years, the amortization of advances for uranium supplies will be approximately \$33 million for the contract with Rio Algom Limited and approximately \$59 million for Denison Mines Limited.

Ontario Hydro has entered into long-term contracts with Denison Mines Limited and Rio Algom Limited for uranium supplies through to 2012 and 2027, respectively. Ontario Hydro's current forecast of the annual requirements for uranium is approximately 1,300 megagrams for 1989, increasing to approximately 1,700 megagrams by 1994. The uranium inventory as at December 31, 1988, and the contracted deliv-

eries through to the end of 1993 are in balance with the forecasted requirements to the end of 1993. Commencing in 1994 through to 2012, contracted deliveries exceed forecasted requirements of the nuclear generating facilities currently in service and under construction by approximately 1,000 megagrams per year. Ontario Hydro's options for managing the oversupply include resale of the uranium and, under specified conditions, cancellation or renegotiation of the contracts. In the event that a contract is cancelled, the supplier is not required to refund any outstanding advances. At this time, the likelihood of a contract cancellation and the financial implications of pursuing the options are not determinable.

10. Unamortized deferred costs	1988	1987
	millions of dollars	
Bruce Heavy Water Plant "D"	185	222
Wesleyville Generating Station	15	20
	200	242
Fuel oil contract	116	146
Coal Purchase Agreement	85	85
	401	473

Unamortized deferred costs are amounts that the Board of Directors, under its rate setting authority, has determined be deferred and amortized for recovery through electricity rates on a straight-line basis over a specified period of years. The nature of these costs are described below.

- Bruce Heavy Water Plant "D" is an indefinitely deferred project with a low probability of construction being resumed. The capital cost of this project and the unamortized deferred costs associated with the cancelled Wesleyville Generating Station project are being amortized over the period 1984

through 1993. Accordingly, \$40 million was charged to depreciation in 1988.

- Under the terms of the settlement reached by Ontario Hydro and Petrosar Limited in 1987 with respect to a fuel oil contract, Ontario Hydro paid \$150 million to Petrosar Limited and the parties released each other from all obligations and claims related to the contract. The net cost of this settlement is being amortized over the period 1988 through 1992. Accordingly, \$29 million was charged to fuel used for electric generation in 1988.

#### 10. Unamortized deferred costs (continued)

• In 1987, Ontario Hydro provided USX Corporation with notification of cancellation of the Coal Purchase Agreement pursuant to the three year notice period provision in the Agreement. On cancellation of the Agreement, USX is not required to refund any outstanding pre-production payments made in advance of the coal deliveries to Ontario Hydro. The outstanding advances and associated costs as at the date of cancellation of the Agreement are estimated to be approximately \$85 million and are to be amortized over the period 1989, the first year such cost can be reflected in rates, through 1993. Accordingly, no amount was charged to

operations in 1987 or 1988. If USX Corporation decides not to continue operating the Cumberland Mine after the cancellation of the Agreement, Ontario Hydro is liable for certain lease obligations and mine shutdown costs. At this time, the likelihood of USX Corporation deciding not to continue operating the mine is not determinable. Furthermore, the amount of such costs in the event of discontinued operation of the mine are subject to negotiation. Accordingly, no provision for such costs has been reflected in the financial statements.

#### 11. Long-term debt

	1988	1987
	<i>millions of dollars</i>	
Bonds and notes payable	25,775	24,910
Other long-term debt	130	154
	25,905	25,064
Less payable within one year	1,665	1,202
	24,240	23,862

Bonds and notes payable, expressed in Canadian dollars, are summarized by years of maturity and by the currency in which they are payable in the following table:

Years of Maturity	1988			1987		
	Principal Outstanding		Weighted Average Coupon Rate per cent	Principal Outstanding		Weighted Average Coupon Rate per cent
	Canadian	Foreign <i>millions of dollars</i>		Total <i>millions of dollars</i>		
1988	—	—	—	1,182		
1989	936	708	1,644	1,696		
1990	1,028	640	1,668	1,729		
1991	1,394	281	1,675	2,031		
1992	983	927	1,910	2,007		
1993	2,545	42	2,587	—		
1 – 5 years	6,886	2,598	9,484	8,645	11.5	
6 – 10 years	4,261	995	5,256	5,200	10.3	
11 – 15 years	2,628	617	3,245	3,266	11.6	
16 – 20 years	2,619	2,107	4,726	3,475	9.9	
21 – 25 years	1,511	1,553	3,064	4,073	11.8	
26 – 30 years	—	—	—	251	12.0	
	17,905	7,870	25,775	24,910	11.1	

#### Currency in which payable:

Canadian dollars	17,905	15,406
United States dollars	7,858	9,483
United Kingdom pounds sterling	12	21
	25,775	24,910



II. Long-term debt (continued)

Ontario Hydro has entered into financial arrangements to hedge a portion of the foreign currency exposure related to principal and interest payments with respect to long-term debt and these arrangements are primarily in short-term forward exchange contracts. These contracts amounted to United States \$2,198 million as at December 31, 1988 (1987—United States \$641 million and United Kingdom pounds sterling 10 million), having a weighted average Canadian dollar exchange rate of 1.26 (1987—1.34 and 2.31 respectively). These financial arrangements hedge principal and interest payments amounting to United States \$719 million due in 1989 and the remaining United States \$1,479 million hedge principal and interest payments due over the period 1990 through 1997.

Bonds and notes payable in United States dollars include

Canadian \$5,689 million (1987—Canadian \$6,614 million) of Ontario Hydro bonds held by the Province of Ontario and having terms identical with Province of Ontario issues sold in the United States on behalf of Ontario Hydro. Bonds and notes payable are either held, or guaranteed as to principal and interest, by the Province of Ontario.

Ontario Hydro has entered into interest rate swap arrangements amounting to Canadian \$1,380 million in notional principal as at December 31, 1988 (1987—Canadian \$1,000 million), and expiring in 1989 through 1993. These arrangements have effectively converted fixed interest rates on long-term debt, having a weighted average coupon rate of 10.0% (1987—9.9%), to variable interest rates which are adjusted quarterly to the prevailing Canadian bankers' acceptance rate.

<i>Other long-term debt:</i>	<i>Years of</i>	<i>Interest</i>	<i>1988</i>	<i>1987</i>
	<i>Maturity</i>	<i>Rate</i>	<i>millions of dollars</i>	
		<i>per cent</i>		
Balance due to Atomic Energy of Canada Limited on purchase of Bruce Heavy Water Plant "A"	1992	7.8	87	104
Capitalized lease obligation for the Head Office building, payable in U.S. dollars	2005	8.0	42	47
Capitalized lease obligations for transport and service equipment	1989 to 1994	6.3 to 11.9	1	3
			130	154

Payments required on the above debt, excluding interest, will total \$96 million over the next five years. The amount payable within one year is \$21 million (1987—\$20 million).

12. Accrued fixed asset removal and irradiated fuel disposal costs	1988	1987
	millions of dollars	
Accrued fixed asset removal costs		
– accrued decommissioning costs	212	162
– accrued fuel channel removal costs	194	149
	406	311
Accrued irradiated fuel disposal costs	365	306
	771	617

*Fixed asset removal costs:*

Fixed asset removal costs are the costs of removing certain fuel channels from nuclear reactors which are expected to be replaced during the life of the reactors, and the costs of decommissioning nuclear and fossil generating stations and heavy water production facilities after the end of their service lives. The significant assumptions used in estimating fixed asset removal costs were:

- removal of fuel channels in Pickering Nuclear Generating Station "A" units 1 and 2 in the 1984 to 1988 (1987–1984 to 1987) period and units 3 and 4 in the 1997 to 2000 (1987–2000 to 2003) period, Bruce Nuclear Generating Station "A" in the 2001 to 2011 (1987–2002 to 2010) period, Pickering "B" in the 2012 to 2017 (1987–2012 to 2018) period and Bruce "B" in the 2014 to 2020 (1987–2013 to 2019) period ;
- decommissioning of nuclear generating stations in the 2041 to 2065 period on the deferred dismantlement basis (dismantlement following storage with surveillance for a 30-year period after shutdown of the reactors), and a transportation distance of 1,000 kilometres from nuclear generating facilities to disposal facilities;
- dismantlement of Bruce Heavy Water Plants "A", "B" and "D" in the 1991 to 2005 period;
- interest rates through to 2065 ranging from 10 % to 11 % (1987–9 % to 10 %); and
- escalation rates through to 2065 ranging from 4 % to 9 % (1987–4 % to 8 %).

Because of possible changes to the above factors and the methods used for decommissioning and fuel channel removal, these costs are subject to revision.

*Irradiated fuel disposal costs:*

The significant assumptions used in estimating the future irradiated fuel disposal costs were:

- an in-service date of the year 2010 for irradiated nuclear fuel disposal facilities;
- a transportation distance of 1,000 kilometres from nuclear generating facilities to disposal facilities;
- interest rates through to the disposal date ranging from 10 % to 11 % (1987–9 % to 10 %); and
- escalation rates through to the disposal date ranging from 4 % to 9 % (1987–4 % to 7 %).

Because of the uncertainties associated with the technology of disposal, and the above factors, these costs are subject to change.

### 13. Statement of Source of Cash Used for Investment in Fixed Assets

The Statement of Source of Cash Used for Investment in Fixed Assets reports the investment in fixed assets resulting from the cash flows from operations, financing and other activities, and the effects of changes in cash and cash equivalents and changes in accounts payable and accrued charges affecting investment in fixed assets during the year. This statement focuses on the investment in fixed assets in view of Ontario Hydro's current level of construction activities which are financed from two major sources, cash provided from operations and cash provided from financing. Cash provided from

financing represents the amount of cash provided from the issuance of long-term debt and the increase in the level of short-term notes payable issued for debt management purposes, less the amount of cash used to retire long-term debt.

The components of cash provided from operations, cash provided from investment in other assets, and changes in cash and cash equivalents, defined to be cash and temporary investments net of short-term notes payable issued for cash management purposes, are summarized below.

	1988	1987
	<i>millions of dollars</i>	
<i>Cash provided from operations:</i>		
Net Income	626	271
Items not requiring cash in the current year		
Depreciation	811	723
Amortization of foreign exchange gains and losses	(61)	93
Provision for irradiated fuel disposal costs	26	36
Nuclear agreement—payback	11	(23)
Other	120	37
Funds provided from operations	1,533	1,137
Changes in working capital, excluding cash and cash equivalents, and long-term accounts payable affecting operations—(increase) decrease	(165)	67
Cash provided from operations	1,368	1,204
<i>Cash used for investment in other assets:</i>		
Advances and related costs for fuel supplies	(2)	(11)
Less repayments and amortization of advances for fuel supplies	27	35
	25	24
Payment related to fuel oil contract settlement (see note 10)	—	(150)
Other	(70)	(23)
Cash used for investment in other assets	(45)	(149)
<i>Changes in cash and cash equivalents:</i>		
Cash and temporary investments—		
(increase) decrease	(223)	45
Short-term notes payable issued for cash management purposes—(decrease)	(2)	(3)
Changes in cash and cash equivalents—(increase) decrease	(225)	42
The reconciliation of the change in fixed assets during the year with the investment in fixed assets for the year is summarized below:		
Change in fixed assets	1,989	1,883
Depreciation of fixed assets in service	774	717
Less depreciation charged to heavy water production and construction in progress	(95)	(89)
	679	628
Net book value of fixed assets sold or retired	21	13
Investment in fixed assets	2,689	2,524

#### 14. Pension and Insurance Plans

Ontario Hydro's employee benefit programs include pension and insurance plans. The assets of the pension, group life insurance and long-term disability plans and the changes in assets during the year are shown in the financial statements of The Pension and Insurance Fund, and are not included in Ontario Hydro's financial statements.

##### *Pension Plan:*

The most recent actuarial valuation for accounting purposes of Ontario Hydro's pension plan was performed as at December 31, 1987, using management's best estimate of the following significant assumptions which take into consideration the long-term nature of the pension plan:

- rate used to discount future investment income—8.50% (1987—9.25%), and future pension benefits—8.50% (1987—9.25%);
- salary escalation rate—7.00% (1987—7.75%);
- rate used to estimate ad hoc improvements in pension benefits to partially offset the effect of increase in cost of living—2.50% (1987—2.88%);
- average retirement age for males—59.1 (1987—58.8) and for females—60.2 (1987—59.8); and
- average remaining period of service of the employees—17 years (1987—16 years).

Based on this valuation, the actuarial present value of the accrued pension benefits is estimated to be \$3,182 million as at December 31, 1988 (1987—\$2,749 million), and the pension plan assets available for these benefits were \$3,451 million (1987—\$3,151 million).

The pension costs for 1988 were \$40 million based on the most recent actuarial valuation for accounting purposes

(1987—\$13 million). This amount is comprised of Ontario Hydro's current service cost of \$69 million (1987—\$60 million), partially offset by the amortization of \$29 million of the net surplus (1987—\$47 million). In 1988, approximately \$30 million (1987—\$10 million) of the pension costs were charged to operations and \$10 million (1987—\$3 million) were capitalized.

On October 21, 1986, the Ontario Hydro Employees' Union, Local 1000 of the Canadian Union of Public Employees—C.L.C. filed an application for judicial review in the Supreme Court of Ontario to determine whether Ontario Hydro is entitled to apply the pension surplus that has accumulated in Ontario Hydro's pension plan to meet the Corporation's contribution with respect to current service cost. The hearing on this matter was held on February 5, 1987 and on March 3, 1987, the Supreme Court of Ontario rendered its decision that Ontario Hydro has complied with the relevant statutory provisions regarding the corporate contribution towards current service cost. The Ontario Hydro Employees' Union appealed the court's decision and the hearing on this appeal was held on December 9, 1988. At this time, the decision of the Supreme Court of Ontario with respect to this appeal and any financial implications for Ontario Hydro are not determinable.

##### *Group Life Insurance Plan:*

The group life insurance plan had assets of \$25 million as at December 31, 1988 (December 31, 1987—\$31 million). Effective April 1, 1986, the assets are being used to pay the insurance premiums for all members of the plan until such time as the assets are fully utilized.

#### 15. Research and development

In 1988 approximately \$88 million of research and development costs were charged to operations and \$22 million were capitalized (1987—\$74 million and \$17 million, respectively).

#### 16. Comparative figures

Certain of the 1987 comparative figures in the Statement of Financial Position and the Statement of Source of Cash Used for Investment in Fixed Assets have been reclassified to conform with the 1988 financial statement presentation.

# **FIVE-YEAR SUMMARY OF FINANCIAL AND OPERATING STATISTICS**

	1988	1987	1986	1985	1984
	<i>millions of dollars</i>				
<b>Revenues</b>					
Primary power and energy					
Municipal utilities	3,824	3,441	3,116	2,891	2,555
Rural retail customers	1,103	968	885	815	712
Direct industrial customers	730	675	604	568	516
	5,657	5,084	4,605	4,274	3,783
Secondary power and energy	156	196	248	351	429
	5,813	5,280	4,853	4,625	4,212
<b>Costs</b>					
Operation, maintenance and administration	1,354	1,150	1,014	966	884
Fuel and fuel-related	1,281	1,308	1,089	1,143	1,210
Depreciation	811	723	705	655	476
	3,446	3,181	2,808	2,764	2,570
<b>Income before financing charges</b>	2,367	2,099	2,045	1,861	1,642
<b>Financing charges</b>					
Gross interest	2,845	2,744	2,684	2,551	2,322
Capitalized interest	(1,012)	(978)	(1,038)	(1,166)	(1,293)
Investment income	(93)	(64)	(61)	(60)	(80)
Foreign exchange	1	126	213	176	118
	1,741	1,828	1,798	1,501	1,067
<b>Net income</b>	626	271	247	360	575
<b>Financial position</b>					
	<i>millions of dollars</i>				
Total assets	34,358	32,657	31,357	29,320	27,301
Fixed assets	29,975	27,986	26,103	24,149	22,147
Long-term debt	24,240	23,862	23,494	22,518	20,659
Equity	5,588	4,962	4,691	4,444	4,084
<b>Cash flows</b>					
	<i>millions of dollars</i>				
Cash provided from operations	1,368	1,204	1,040	1,055	1,088
Cash provided from financing	1,575	1,355	1,850	737	1,737
Cash used for investment					
in fixed assets	2,673	2,452	2,585	2,644	2,539
Investment in fixed assets	2,689	2,524	2,523	2,541	2,624
<b>Financial indicators</b>					
Debt ratio <sup>(1)</sup>	0.829	0.836	0.835	0.830	0.833
Cash flow coverage <sup>(2)</sup>	1.19	1.08	1.05	1.02	.96
Interest coverage <sup>(3)</sup>	1.23	1.10	1.09	1.14	1.25
	<i>millions of kilowatt-hours</i>				
<b>Primary energy sales<sup>(4)</sup></b>					
<b>By major customer category</b>					
Municipal utilities	89,607	84,058	80,026	77,011	74,283
Rural retail customers	18,365	16,599	16,279	15,638	14,732
Direct industrial customers	20,096	19,561	18,458	18,011	17,816
	128,068	120,218	114,763	110,660	106,831
<b>Secondary energy sales<sup>(4)</sup></b>	5,019	6,515	6,046	8,565	10,627
<b>Energy and Demand</b>					
Installed dependable peak capacity (megawatts) <sup>(5)</sup>	30,333	30,080	30,701	28,224	26,612
December primary peak demand (megawatts)	23,012	20,524	20,609	20,473	18,052
Primary energy made available (millions of kilowatt-hours) <sup>(6)</sup>	134,395	126,455	120,574	116,049	112,293



	1988	1987	1986	1985	1984
<b>Number of primary customers<sup>(4)</sup></b>					
Municipal utilities	316	316	316	316	319
Rural retail customers	863,039	835,937	813,193	795,022	779,748
Direct industrial customers	110	108	106	103	105
	<i>in cents per kilowatt-hour of total energy sales</i>				
<b>Average revenue<sup>(4)</sup></b>					
Primary power and energy					
Municipal utilities	4.268	4.094	3.894	3.754	3.440
Rural retail customers	6.361	6.248	5.901	5.720	5.143
Direct industrial customers	3.633	3.451	3.272	3.155	2.896
Secondary power and energy	3.108	3.008	4.102	4.098	4.037
All classifications combined	4.402	4.203	4.060	3.923	3.586
	<i>expressed as a per cent</i>				
<b>Average rate increases</b>					
Municipal utilities	4.7	5.2	4.0	8.5	8.0
Rural retail customers	4.4	6.6	3.8	8.7	7.5
Direct industrial customers	5.2	5.6	4.3	8.8	7.6
All primary customers combined	4.7	5.5	4.0	8.6	7.8
<b>Average cost<sup>(4) (7)</sup></b>					
	<i>in cents per kilowatt-hour of energy generated</i>				
<b>Hydraulic</b>					
Operation, maintenance and administration	.270	.276	.213	.187	.184
Fuel-water rentals	.274	.285	.243	.233	.164
Depreciation and financing charges	.386	.465	.413	.399	.384
	.930	1.026	.869	.819	.732
<b>Nuclear</b>					
Operation, maintenance and administration	.623	.508	.481	.479	.506
Fuel-uranium	.453	.481	.481	.426	.361
Depreciation and financing charges	2.078	2.193	2.073	1.880	1.330
	3.154	3.182	3.035	2.794	2.197
<b>Fossil</b>					
Operation, maintenance and administration	.530	.488	.550	.437	.348
Fuel-coal, gas and oil	2.258	2.600	2.746	2.609	2.500
Depreciation and financing charges	.918	.933	1.367	.997	.597
	3.706	4.021	4.663	4.043	3.445
<b>Average number of employees</b>					
Regular	24,543	24,066	23,373	23,001	23,150
Non-regular <sup>(8)</sup>	7,930	8,081	9,032	8,135	6,463

#### Footnotes

(1) Debt ratio represents debt (bonds and notes payable, short-term notes payable, other long-term debt, and accrued fixed asset removal and irradiated fuel disposal costs less unamortized foreign exchange gains and losses) divided by debt plus equity.

(2) Cash flow coverage ratio represents funds provided from operations plus net interest, and interest charged to fuel for electric generation less interest on accrued provisions divided by interest on bonds, notes, and other debt.

(3) Interest coverage represents net income plus interest on bonds, notes, and other debt divided by interest on bonds, notes, and other debt.

(4) Figures for 1988 are preliminary.

(5) Installed dependable peak capacity represents the net output power supplied by all generating units, and includes non-operating reserve

facilities: 1988—2,109 megawatts; 1987—2,667 megawatts; 1986—3,784 megawatts; 1985—3,933 megawatts; and 1984—3,999 megawatts. Also included are net firm power purchase contracts.

(6) Primary energy made available represents primary energy sales plus transmission losses and energy used for heavy water production and generation projects.

(7) Average cost per kilowatt-hour represents the costs attributable to generation but excludes the costs related to transmission, distribution and corporate administrative activities. These figures reflect the historical accounting costs of operating facilities and the actual energy generated by these facilities during the year.

(8) The majority of non-regular staff are construction trades persons.

**FIVE-YEAR SUMMARY OF STATISTICS—CUSTOMERS SERVED BY ONTARIO HYDRO  
AND ASSOCIATED MUNICIPAL UTILITIES**

	1988	1987	1986	1985	1984
<b>Total number of customers<sup>(1)</sup></b>			<i>in thousands</i>		
Residential	2,967	2,868	2,781	2,712	2,652
Farm	106	106	106	107	107
Commercial and industrial	390	377	365	354	346
	3,463	3,351	3,252	3,173	3,105
<b>Average annual use<sup>(1)</sup></b>			<i>in kilowatt-hours per customer</i>		
Residential	11,300	11,019	10,909	10,618	10,590
Farm	24,795	23,547	23,004	22,618	22,556
Commercial and industrial	221,600	220,834	216,666	213,673	212,700
<b>Average revenue<sup>(1)</sup></b>			<i>in cents per kilowatt-hour</i>		
Residential	6.30	5.98	5.63	5.42	5.02
Farm	6.67	6.48	6.00	5.74	5.24
Commercial and industrial	4.62	4.40	4.20	4.03	3.74

Footnote (1) Figures for 1988 are preliminary.

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Thunder Bay P7A 4L5

WESTERN REGION  
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## ACKNOWLEDGEMENTS

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of the following companies and individuals:*

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Citibank Canada

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Wilson and Rebecca Prewitt

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The People of the Community of Webequic

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ONTARIO HYDRO

ANNUAL REPORT 1989



Choices for Our Future Generation

Ontario Hydro

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ONTARIO HYDRO  
ANNUAL REPORT 1989



Choices for Our Future Generation

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**ONTARIO HYDRO BOARD OF DIRECTORS  
REPORT FOR 1989**

To the Honourable Lyn McLeod, Minister of Energy

On behalf of the Board of Directors, I am pleased to submit to you Ontario Hydro's report of the financial position of the corporation, with discussion and analysis of issues and initiatives for 1989 and beyond.

We thank you and your staff in the Ministry of Energy for the co-operation extended over the year.



Robert C. Franklin  
Chairman of the Board of Directors  
April, 1990

## CORPORATE PROFILE

Ontario Hydro serves the electricity needs of the province. We try to do this while staying in tune with our customers, their needs and their expectations. Our goal is to provide good energy value while caring for the environment, involving the public in planning for the future, and being an open and accessible corporation.

Ontario Hydro was created in 1906 by a special statute of the Province of Ontario. We are a financially self-sustaining corporation without share capital. Bonds and notes issued to the public are guaranteed by the province. Under the Power Corporation Act, it is our responsibility to generate, supply and deliver electricity at cost throughout Ontario. We also produce and sell steam and hot water as primary products. We work with and regulate municipal utilities. In co-operation with the Canadian Standards Association, we are responsible for the inspection and approval of electrical equipment and wiring throughout the province.

We sell wholesale electric power to 315 municipal utilities, which, in turn, retail it to customers in their service area. We also directly serve more than 100 large industrial customers and 891,306 small business and residential customers in rural and remote areas. The total number of customers, direct and indirect, is 3.5 million.

Ontario Hydro operates 80 hydroelectric, fossil-fuelled and nuclear generating stations and an extensive transmission and distribution system across the province.

The corporation is controlled by a Board of Directors. The board can have up to 17 members who are appointed by the Lieutenant-Governor-in-Council of Ontario. The President and Chief Executive Officer, also a Board member, is a full-time employee of the corporation and appointed by the Board. There are six Committees of the Board: Finance, Audit, Management Resources, Social Responsibility, Technical Advisory, and Pension and Insurance.

Our head office is located at 700 University Ave., Toronto. We also have six Regional and 47 Area offices across Ontario to serve our customers.

## FINANCIAL HIGHLIGHTS

	1989	1988
	<i>millions of dollars</i>	
Revenues	6,346	5,813
Net Income	699	626
Total Assets	36,277	34,358
Investment in Fixed Assets	3,095	2,689

## FUTURE GENERATIONS

What will the future be like? What will electricity's role be?

Ontario's elementary schools recognize the stake our children have in these questions and have put aside time to study energy. We asked parents and teacher Georgette Bray if we could observe her Grade 3 French immersion class at Pine Street Public School in Thunder Bay, Ontario, while she explored the topic with them.

We watched them in the classroom, illustrating and discussing electricity and its role in their lives and the future. We also watched them use electricity in a multitude of ways that students – and the rest of us – have come to take for granted. The result was a series of bold, optimistic paintings and photographs which illustrate this annual report.

We wish to thank the students, their parents, Madame Bray, Pine Street Principal Gerry Carlson, and the Thunder Bay Board of Education for their kind and generous co-operation.



The Grade 3 French immersion class and teacher Georgette Bray, Pine Street Public School, Thunder Bay, Ontario.

**MESSAGE FROM ROBERT C. FRANKLIN,  
CHAIRMAN, PRESIDENT AND CHIEF EXECUTIVE OFFICER**



At Ontario Hydro, our mandate is to provide the province with a reliable, reasonably-priced supply of electricity. The fulfilment of this mandate has been a major factor in Ontario's economic prosperity for the more than 80 years since public power became a reality.

But hand-in-hand with that mandate are other considerations which are just as important. We have a responsibility to this and future generations to ensure that Hydro's operations have the least possible adverse impact on the natural environment. Like the citizens of Ontario we serve, Hydro and its employees are concerned about our quality of life, about clean air and soil, about lakes we can swim and fish in. The decisions we make together must take into account both today's need for reliable reasonably-priced electricity and the right of future generations to inherit a habitable world.

As a result, our planning has to try to reconcile many and diverse objectives, some of them in conflict with each other. We want to maintain our financial soundness. We want to be sure our operations enhance the lifestyle of the citizens of Ontario. We want to be sure that our presence in various parts of the province is acceptable and in harmony with the people living there now and in the future.

The responsibilities all of us have to this generation and to future generations as we enter the last decade of the 20th Century were at the forefront of our minds over the last five years as we developed – in consultation with the public – our 25-year plan to supply Ontario's electricity needs.

The plan was released in December and Hydro is now in the process of going back to the public and its customers to ask them to respond to its specifics. Hydro needs to know how they think electricity should be generated in the longer term so their children and their children's children can be best served. We also need their help now to conserve electricity to enable future generations to sustain and improve their way of life.

These are not decisions Hydro can make in isolation, nor should they be. What Hydro has already done, and will continue to do in the weeks and months ahead, is to take a leadership role in bringing these issues before the people of Ontario. But that leadership must forge a partnership with the people of Ontario, otherwise we will not be successful in finding answers.

Five years ago we began seeking that partnership by talking to more than 300 opinion leaders and citizens in 13 centres around the province. We heard from 58 special interest groups representing hundreds of thousands of Ontarians. They told us what people wanted, and more emphatically what they didn't want. They made it clear that before supporting a decision to build a major new generating station, they wanted Hydro to explore in depth a range of alternatives such as conservation, energy efficiency and the parallel and co-generation of electricity by private producers.

To try to meet these needs and expectations, Ontario Hydro has put forward what we believe is a balanced plan. We are trying to strike a balance between the growing needs of our customers and the resources which are available to meet them, between the economic operation of Hydro's system and environmental protection, and between measures to save electricity and measures to produce more as it's needed.

Most of all, a balance has to be struck between the needs of this generation and those of future generations. This is not an issue that can wait. The kind of Ontario, and the kind of world, we hand on to our children and to their children is being decided now.

Given the need to create electricity as it is needed, and the length of time it takes both to change lifestyles and to ensure new capacity, we must plan ahead for 25 years and more. Ontario Hydro is only too aware of the fallibility of predictions, and we have therefore built the largest possible measure of flexibility into our various options.

The decisions which emerge will not be made by closed committees of experts. The people of Ontario have the opportunity, and the responsibility, to plan with Ontario Hydro on behalf of future generations, and I am confident the challenge will be taken up.

*R. G. Frankel*



## CHOICES FOR OUR FUTURE GENERATION

### WANTING IT BOTH WAYS



**Citizen  
wants  
environmental  
protection**

**Customer  
wants  
reliability  
and  
reasonable  
price**

When asked, seven out of 10 people say they want environmental protection over reliable electricity and reasonable price. But answering another question, they said they would be reluctant to sacrifice either reliability or reasonable price.



Graeme, 8; Katey, 8; Christy, 8; and Andrew, 8, display their art.

It is becoming a cliché that we are living in an age of high-tech wizardry. Robots have begun to free people from laborious and repetitive work. Electronic information and illustration travels almost instantly round the globe through satellites, fax machines and computer networks. Our homes are filled with labour-saving and entertainment devices ranging from micro-waves and coffee makers to VCRs and compact disc players.

Individually, each of these technological marvels has proven to be a social and economic success. Together they represent a very complex and often intangible problem.

As they proliferate, our lives become increasingly dependent on having seemingly limitless and inexpensive electricity available on demand. In deciding the best way to supply that electricity, we tend to ignore how electrical generation affects the natural and the social environment in which we live, and which future generations will inherit.

### Wearing two hats

As Ontarians, we wear two hats. Donning our electricity consumer's hat, we've come to expect our lights will go on and our machines will operate every time we flick the switch. We also expect that electricity to be supplied at a reasonable price. This is a cornerstone of our present and continued economic success.

But, switching to our citizen's hat, we are concerned that the greenhouse effect is warming the climate, that depletion of the ozone layer could increase the amount of the sun's radiation to which we are exposed, that society is running out of places to dispose of its waste.

As individuals we look forward to continued economic growth and progress. Unfortunately, growth, and the generation of electricity which helps to fuel it, has a part in many of the environmental problems which concern us.

### Present and future needs

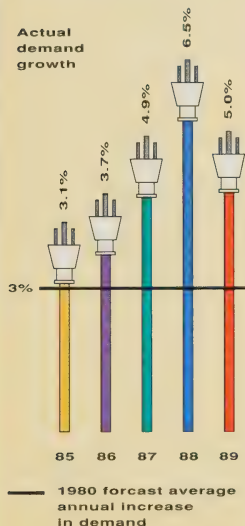
So we have difficult decisions to make about what our future sources of electricity will be. To the consumer, the answer may seem as simple as building a new generating station. The concerned citizen, by contrast, will want to avoid the impacts on the environment which inevitably accompany new generating stations.

The contradiction between our desire to maintain our social and economic well-being and our desire to preserve the natural world around us is a common one, and extremely difficult to resolve. There will always be tension between the immediate individual needs of today, and the more distant community needs of the future.



**The Electric Magic Dictionary,**  
by Carla, 8.

#### DIFFICULTY IN FORECASTING



Annual growth in demand fluctuates due to economic conditions and other factors, making forecasting problematic.

Both citizens and customers, however, are showing an increasing understanding of the need to make tough choices, and this applies to the field of electricity as well. Ontario Hydro considered the problem of satisfying both consumer and citizen as it put together its recommended plan to supply electricity to the province over the next 25 years.

The facilities needed to generate new electricity supply take years to plan and build, and are expensive. We rely on forecasts to tell us what the growth in the demand for electricity will be and when we'll need more. However, forecasting in the utility business, as in other businesses, has proven to be an inexact science.

For example, few could have predicted in 1970 that the world price of oil would rise to well over \$30 (U.S.) a barrel by 1981. On the other hand, no one would have predicted in the early 1980s that, by the middle of the decade, the price of oil would fall to \$15 (U.S.) a barrel.

#### Preparing for the future

Similarly, the 1980 prediction for growth in the demand for electricity during the 1980s was about 3 per cent each year. No one foresaw the staggering growth in Ontario's economy after 1984 or the resulting growth in demand for electricity during that time. Instead of 3 per cent, demand rose an average of 5 per cent in each of the last seven years of the 1980s.

Whatever their fallibility, however, we must continue making a range of forecasts and preparing for a future based on them. Right now, Ontario Hydro is forecasting that the demand for electricity may overtake the corporation's ability to supply it by the mid-1990s unless a strenuous program to increase the efficiency of electricity use and conservation is urgently implemented. That prediction takes into account the full operation of the Darlington Generating Station and a decline in new demand growth to 2.9 per cent a year.

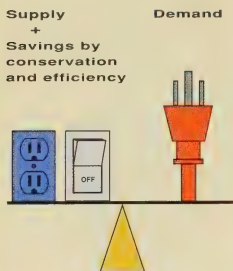
#### 25-year plan

Hydro's 25-year plan, published in December, seeks to deal with the need for electricity by taking a balanced approach, integrating measures to produce more electricity with measures designed to reduce growth in demand.

The plan attempts to achieve trade-offs involving a variety of customer and citizen expectations such as environmental considerations, safety, reliability and low cost. The balanced approach offers choices so everyone can contribute to ensuring there is enough electricity now and in the future.

Conserving electricity is an attractive choice and it doesn't mean doing without. It simply means using electricity more thoughtfully, more efficiently,

## KEEPING THE BALANCE



Conservation and efficiency will be vital in the 1990s in balancing supply and demand because no new major generating stations will be built before 2000.

less wastefully. Conservation can be accomplished by improving insulation in our homes, turning down our thermostats a few degrees, or waiting to use large appliances during the time of day when demand for electricity is at its lowest.

Commerce and industry will be crucial to the impact of any conservation drive in Ontario. Industry is already being offered lower prices to shift its use of electricity to what are known as the "off peak hours". And businesses are being encouraged to install more energy efficient equipment and lighting.

Saving electricity means less pollution because less electricity is being created from sources like fossil-fired stations. Conserving also lessens the need to build as many new large-scale stations. And it means that customers who conserve will save money.

### Private producers

Another way to minimize the building of new generating stations is by encouraging private enterprise to produce electricity. Hydro is already encouraging private producers to generate electricity and sell it to the power system. Much of this privately produced power would be from falling water.

Other businesses are being encouraged to produce their own electricity as a by-product of one of their industrial processes. For example, a business may produce excess steam which could be channelled to provide heat or run a turbine.

Ontario Hydro will also import power from outside the province. For example, Ontario Hydro has contracted to buy 1,000 megawatts of firm power from Manitoba beginning in 2000.

### Upgrading the existing system

Another alternative to new generating stations is to make the most of the existing power system. Rehabilitation and upgrading of older hydroelectric and coal-fired stations is already under way all over Ontario. Many of the province's hydroelectric stations are over 50 years old, but they can be technologically upgraded to bring them to peak efficiency and add more electricity to the system.

Older coal-fired stations can also be technologically upgraded so they continue to produce electricity into the next century. The advantage of these stations is their flexibility. They can be started and reach full power very quickly. This means they can easily serve the periods in the day when demand for electricity is the highest — usually at breakfast and the dinner hour. While coal-fired generation is a direct cause of acid rain, there are ways to substantially reduce its emissions of acid gases.



The Electric Freckle Remover, by Kate, 8.



Michael, 8, and Crystal, 8, discuss their artwork.

#### PRIVATE AND PUBLIC POWER



1,600 megawatts  
of private power

=

CANDU reactors



The 1,600 megawatts of private power expected to be in place by 2000 would provide the same power as about one and a half CANDU reactors.

Hydro plans to install scrubbers on two of its largest coal-fired stations to remove sulphur dioxide. The process creates gypsum as a solid waste which, when processed, can be used for landfill and to manufacture wallboard. The coal these stations burn is “washed” to remove some of the sulphur.

Other Hydro coal-fired stations have been outfitted with special burners which remove some of the nitrogen oxides from their emissions. However, all fossil-fired stations – coal, oil, and natural gas – produce carbon dioxide which is thought to be a cause of global warming or “the greenhouse effect”. There is no satisfactory method as yet to deal with the carbon dioxide emissions.

#### Hydroelectric power

Hydroelectric generation, or electricity generated from falling water, is a renewable resource and relatively benign in its effect on the environment. The stations take only about five years to build and, because the water provides a continuous source of energy, they are inexpensive to run. Hydro is developing plans for a third station at Niagara Falls, a new station on the Little Jackfish River in Northwestern Ontario, and a redevelopment plan for the Mattagami River.

However, overall, there are very few places left in Ontario where new hydro-electric development is economically feasible. Although the province has vast water resources, little of it has the steep drop – like Niagara Falls – necessary to rush the water through the turbines. This can be accomplished by damming rivers and creating what are known as head ponds. But dams mean areas of land are submerged in water which is often unacceptable to surrounding communities.

#### New generating systems

While all the measures mentioned so far will go a long way towards securing our supply of electricity, there will be a growing gap between supply and demand for electricity by the end of the century which will probably have to be filled by new generating stations. To fill this gap, Hydro has proposed a mix of combustion turbine units and CANDU nuclear stations.

The combustion turbine units burn natural gas, the cleanest of the fossil fuels. These units can also be built and brought into service in the shortest length of time. Because of their flexibility, Hydro proposes to use them to meet the peak periods of demand during the day.

To provide what is known as the “base load”, or the constant demand for electricity throughout the day, Hydro suggests building more nuclear stations. About 46 per cent of Ontario’s electricity is now generated by Hydro’s CANDU nuclear stations.



**The Electric Homework Machine**  
by Devin, 8, and Chris, 9.

Nuclear stations are very expensive to construct and take well over 10 years to build. However, once they are operating, CANDU stations have proven to be an economical way of generating electricity. A nuclear station's contribution to air pollution is minimal, but there is concern about where the used uranium fuel from these plants will be stored.

Right now, the used fuel is being stored in pools of water at the stations and may be stored some day in above-ground depositories at the stations. One method of disposal might be to place the used fuel deep in the bedrock of the Canadian Shield. The federal government will hold hearings to determine if such a proposal is acceptable. The safety of nuclear power is also a concern, but the CANDU reactor boasts an impressive safety record, and a system of safeguards designed to meet any conceivable emergency.

Conservation and greater efficiency of use; imports and purchases from private producers and other utilities; rehabilitation; hydroelectric, natural gas, coal and nuclear energy. All of these are components of Hydro's plan for the next 25 years. Together they provide a balance of options to produce or conserve electricity.

The balance we achieve will never be perfect or permanent and it would be counterproductive to search for one ideal solution. Instead we must continue to become more fully aware of the options which are (and which are not) available to us all. Only through improved understanding of the many factors underlying our choices will the difficult choices facing both Ontario Hydro and its customers become more manageable.





**A**s Andrea moves through her teens, public awareness campaigns should encourage Ontarians to save more electricity in the 1990s than Brampton, Burlington, Kitchener and St. Catharines combined use today.



Andrea, 8.

## HIGHLIGHTS OF 1989

**Continuing growth** — Demand for electricity in Ontario increased 5 per cent in 1989. In the Metro Toronto area, some municipal loads increased by more than 15 per cent. Ontario Hydro supplied a total of 140.8 million megawatt-hours of electricity last year, compared to 134.4 million megawatt-hours in 1988. In December, a new all-time record peak in daily demand of 23,630 megawatts was reached. In 1989, Hydro was a net importer of power, buying 7.1 million megawatt-hours of electricity while selling 2.3 million megawatt-hours.

## CUSTOMER AWARENESS



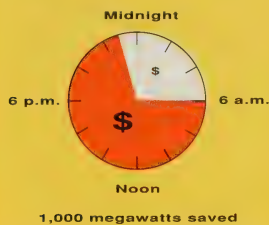
1,500 megawatts saved

## INCENTIVES



2,000 megawatts saved

## TIME OF USE RATES



How Hydro plans to save 4,500 megawatts of electricity by the year 2000.

**Providing the Balance of Power** — After five years of public consultation and internal study, Ontario Hydro released its 25-year plan for supplying the electricity needs of the province. The plan proposes a balance of the various options and suggests ways in which they can be integrated.

As part of the plan, Hydro will spend \$3 billion over the next decade on one of the most ambitious energy efficiency programs undertaken by any North American utility, designed to encourage its customers to cut back on their use of electricity and use electricity more efficiently. This should provide about 25 per cent of Ontario's new needs by the year 2014, almost equal to the output of one and a half generating stations the size of Darlington at full power.

Another important component of Hydro's plan is the encouragement of private-sector power projects in Ontario. Some private producers sell electricity directly to Hydro or other companies. Others produce electricity for their own use. In each case, Hydro avoids having to generate that electricity itself. These private producers will eventually provide about 12 per cent of new electricity needs over the life of the plan.

A third component of the plan is making the most of hydroelectric or water-powered generation which is renewable and doesn't produce any waste. New stations are being developed at Niagara Falls, the Little Jackfish River, and the Mattagami River; and existing hydroelectric stations are being refurbished. These plans will enable water power to continue to provide about 10 per cent of our electricity over the life of the plan.

After looking at a number of options, Hydro is recommending the other half of new requirements to the year 2014 come from CANDU nuclear stations for base demand, gas-fired plants for meeting the peaks, and existing coal-fired stations to fill intermediate demand. Nuclear generation was proposed because of its relatively low cost and because it causes little air pollution. Natural gas was proposed because the plants are quick and inexpensive to build, flexible to operate and cause less pollution than other fossil-fuel sources.

Public information centres about the 25-year plan were initiated across Ontario. The plan will be subject to an environmental assessment by the government during 1990.

**Electricity from Manitoba** — In a related move to ensure Ontario a secure supply of power, Ontario Hydro signed a 22-year agreement with Manitoba Hydro to purchase 1,000 megawatts of firm power beginning in 2000.

**T**

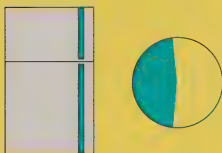
hese children will conserve far more electricity by 2014 than today's adults. So much so that the savings should equal the present needs of Metro Toronto and Ottawa combined.



Clockwise from the right: Bradley, 9; Christopher, 9; Gillian, 8; Paul, 8; Sandy, 9, and Allyson, 8.

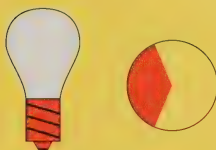


## RESIDENTIAL



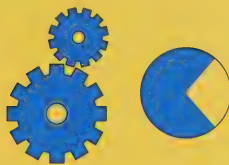
Appliances use 46.8%  
of electricity in homes

## COMMERCIAL



Lighting uses 37.4% of  
electricity in businesses

## INDUSTRIAL



Motors use 73.0% of  
electricity in factories

The largest uses of electricity show where big gains could be made in efficiency or with time-of-use rates.

The power will be produced at a hydroelectric station now being planned in Northern Manitoba. Ontario Hydro will be building new transmission lines and facilities in Northwestern Ontario to accept the purchased power and to improve transmission generally within the area. The long-term commitment to buy a major amount of power is a departure from tradition for Ontario Hydro and will strengthen the balance among diverse sources of supply.

**Energy management** — Energy efficiency and conservation are not new to Ontario Hydro. The corporation has been pursuing these activities for a number of years. Hydro's 25-year plan, however, includes the ambitious target of 4,500 megawatts of demand management savings by 2000.

The first major steps toward that goal were taken in 1989 with the introduction of a number of programs. "Power Savers" is an energy audit program for commercial and industrial customers which analyzes a building's energy use and identifies opportunities to save electricity through such measures as more efficient lighting, better insulation, installation of high efficiency motors, and thermal storage of heat.

During its first year of operation, the energy efficient lighting incentive program was responsible for 15,000 kilowatts of savings among commercial and industrial customers. The program provides customers with up to 50 per cent of the capital cost of conversion.

A streetlighting pilot conversion project, sponsored jointly by Hydro and the Ministry of Energy, was introduced in the northeastern and eastern regions of the province. In those areas, municipalities were offered up to 25 per cent of the cost of converting to energy efficient streetlights. If the program is expanded to the rest of Ontario, the potential savings are 72,000 kilowatts.

Residential customers were encouraged to purchase energy efficiency household items during a discount coupon campaign which ran in September and October. In conjunction with a major retail hardware chain, five million flyers were distributed throughout the province.

Ontario's industrial sector was introduced to the Energy Management Challenge, a portfolio of four programs designed to help industries become more energy efficient. Among these is the high efficiency motor program. Motors represent 70 per cent of all electricity used in industry. High efficiency motors are up to 8 per cent more efficient than standard motors. The program features a rebate of \$12 per horsepower to the purchaser and an additional \$3 per horsepower to the motor distributor to ensure their availability.

Time-of-use rates were also introduced for Ontario's large industrial customers, whether served directly by Hydro or through the municipal utilities. Under this rate structure, electricity costs less during the off-peak night-time hours. During its first full year of operation, time-of-use rates were responsible for a reduction of approximately 80,000 kilowatts of demand.

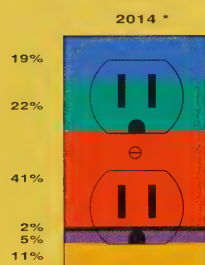
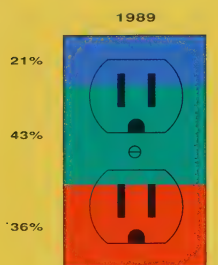


**B**y the time Katey and Davis reach their 30s, electricity from private producers in Ontario could equal the current needs of Mississauga, Hamilton and London.



Katey, 8, and Davis, 8.

## SOURCES OF ELECTRICITY



- Hydroelectric
- Fossil
- Nuclear
- Manitoba purchase
- Privately-produced power
- Conservation and energy efficiency

\* Includes generation in service in 1989 which will still be operating in 2014

Where our power comes from now compared to where our power will come from in 25 years' time.

**Power Corporation Act** — Passed in 1906, this Act spells out Ontario Hydro's mandate to supply power at cost to the people of Ontario. Late in 1989, the Ontario Legislature passed amendments to the Act which increase Ontario Hydro's accountability to the government and the people of Ontario. The amendments reinforce Hydro's obligation to ensure that its activities are carried out in a manner which is compatible with government policy. They also empower Hydro to form subsidiary companies and provide incentives for conservation and private power generation. In addition, they make the President the Chief Executive Officer of the corporation.

**Tritium sales** — Tritium is a radioactive form of hydrogen gas which is produced during the operation of CANDU nuclear reactors. Hydro's new Tritium Removal Facility, at Darlington Generating Station, will extract about 2.5 kilograms of tritium annually.

Hydro received permission in 1989 from the Ontario Government to sell tritium for peaceful uses. Tritium will be sold to specific fusion energy projects in Canada, Europe and Japan and exported only to countries which have signed the Nuclear Non-Proliferation Treaty. It will also be sold to specific radiopharmaceutical companies for use in cancer and AIDS research.

**Private power** — Hydro's Non-Utility Generation Division, which is responsible for the development and purchase of economic private-sector power production, marked its first anniversary in 1989.

By the end of the year, there were 32 private producers under contract with Hydro, producing a total of 111 megawatts of power. There are currently 21 more private power projects being built, a total of 343 megawatts. Ontario Hydro forecasts over 1,600 megawatts of new private power by 2000. At present, there's a total of over 1,200 megawatts of private generation operating in the province, representing about 4 per cent of the corporation's capacity.

**The environment** — As part of its commitment to meet the Ontario Government limits on acid gas emissions, Hydro announced it would begin installing two sulphur dioxide scrubbers at the coal-fired Lambton Generating Station near Sarnia. The \$450 million project will see the first scrubber operating by 1994. The scrubbers remove 90 per cent of sulphur dioxide from the station's flue gas and each will produce between 108,000 and 138,000 tonnes of gypsum annually, which can be made into wallboard or used as landfill. Ontario Hydro's acid gas emissions dropped to 368,000 tonnes in 1989, 14 per cent below the provincial guideline of 430,000 tonnes. Permissible levels of emissions will drop to 280,000 tonnes in 1990 and to 215,000 tonnes by 1994.

Hydro's plan to reduce herbicide spraying, announced in 1988, is now well on the way to its goal of a 35 per cent reduction over five years.

Liquid effluent monitoring equipment is being installed to monitor water flowing from Hydro's generating stations.

**E**

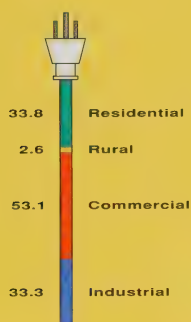
lectronic communications will continue to shrink the world and lifestyle differences between Thunder Bay and Toronto school children will probably disappear by the time Allyson grows up.



Allyson, 8.



## HOW ELECTRICITY IS USED IN ONTARIO



In billions of kilowatt-hours

The commercial sector is the largest user of electricity in Ontario. The other major users, residential and industrial, are about the same.

Environmental auditing has been adopted by Hydro to provide a systematic, documented and objective review of its compliance with regulations and corporate standards. The Production Branch has begun an audit program of its thermal generating stations. The Regions Branch is launching a continuing audit of hazardous materials.

The formation of an environmental advisory panel was approved in 1989. It consists of nine external environmental experts and two Hydro vice-presidents who will meet quarterly, offering advice to Hydro's Senior Management Committee on the environmental effects of major projects, policies, and operating practices.

Hydro employees undertook a waste paper recycling program at Hydro's Head Office and Kipling Avenue Complex in Toronto. A conservative estimate is that 1,600 tonnes a year of high-quality, fine paper will be recycled. Darlington Generating Station has developed a similar program which collects both paper and cardboard. The program is to be expanded throughout the corporation in 1990.

**New Business Ventures** — Ontario Hydro's New Business Ventures Division reported revenues of \$48.8 million in 1989.

New Business Ventures received 80 new contracts last year with a total value of \$9.8 million. Net income in 1989 was \$6.3 million.

**Employment Equity** — Hydro expanded its focus in 1989 from affirmative action programs for women to employment equity which takes in four designated groups — women, visible minorities, aboriginal people, and people with disabilities.

Branches currently set targets for the representation of women in all job categories and, in the future, will set targets for the representation of all four groups.

The Employment Equity Department has recently taken responsibility for co-ordinating internal reviews of human rights complaints.

**Remote community rates and service** — In April, 1989, electricity prices and service conditions for residential and commercial customers in remote communities in Northern Ontario were improved to the same level as those for customers in the rest of the province. Remote customers can now have larger electrical services and upgraded wiring in their homes.

**Service in French** — In November, 1989, Hydro began offering service in French in several areas where francophones make up 10 per cent of the population, or where there's a francophone community of at least 5,000 people.

W

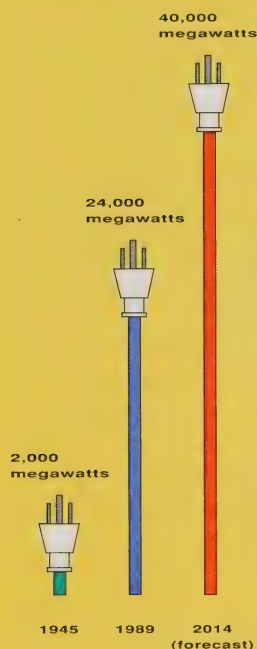
hen Guy is 18, Hydro will have spent about one quarter of the cost of a nuclear station to encourage conservation. This should save more electricity than an entire new station could produce.



Guy, 8.



#### ESCALATING DEMAND GROWTH



Ontario's peak demand for electricity in 2014 should be almost twice the demand in 1989 and about 20 times the demand in 1945.

**Advertising campaign** — "People are talking, Hydro is listening" was the theme of a major television and print advertising campaign launched by the corporation in 1989 to encourage energy conservation. Each ad included a 1-800 telephone number. Over 100,000 people called for information on a variety of Hydro's programs and business procedures.

**Nuclear costs** — The independent Ontario Nuclear Cost Inquiry gave Ontario Hydro a vote of confidence in the way it estimates the cost of nuclear electricity production.

**Price increase** — Hydro's Board of Directors approved an average price increase of 5.9 per cent in electricity rates for 1990 at its October meeting. The price increase, which was in line with the rate of inflation, was needed to cover the cost of new generating facilities coming into service, to meet environmental and regulatory requirements, and to carry out energy efficiency programs.

#### OUR CURRENT OPERATIONS

##### Nuclear Generation

**Darlington unit near start-up** — As 1989 drew to a close, Unit 2 at Darlington Generating Station, on Lake Ontario near Oshawa, began tests at low power. The unit produced its first electricity in late 1989.

**Nuclear safety** — In 156 million hours worked in nuclear operations from 1955 through 1989, there has never been a fatality or any measurable dose of radiation to a member of the public. In 1989, however, two employees at Pickering Generating Station received radiation exposures of 12.4 rem and 5.6 rem. The annual federal whole-body limit for atomic radiation workers is 5 rem. The exposures occurred while they were removing a control rod containing Cobalt-60 from a reactor. Steps have been taken to make sure such an accident does not happen again.

##### Thermal Generation

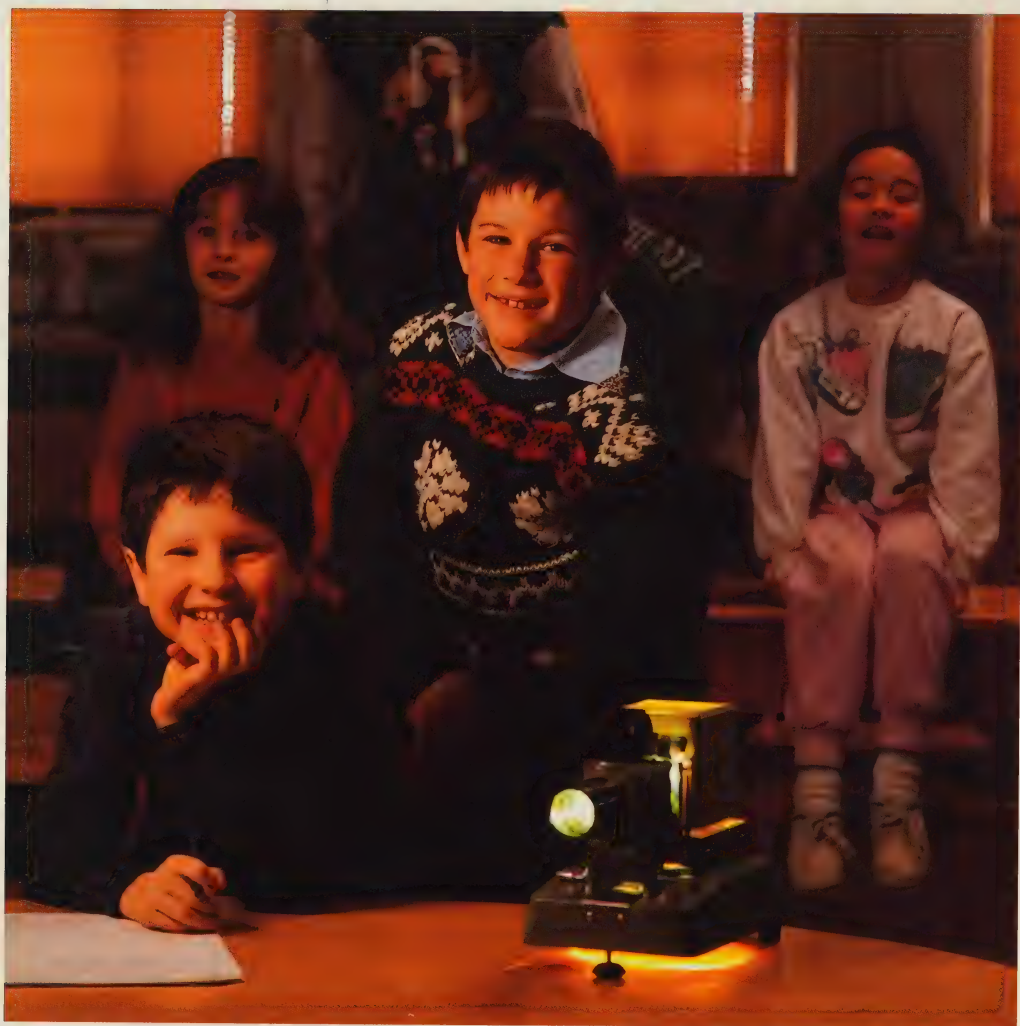
**Lakeview rehabilitation** — About \$1.1 billion will be spent to extend the working life of Hydro's coal-fired Lakeview Generating Station, in Mississauga, to 2006. By using low-sulphur coal in conjunction with new sulphur trioxide/ammonia flue gas conditioners, Lakeview's acid gas emissions will be reduced by up to 40 per cent by the mid-1990s.

**Lennox fully operational** — The oil-fired Lennox Generating Station, near Kingston, became fully operational again late last year to help meet winter peaks in demand.

**Acid gas** — In early 1989, Hydro announced it would spend almost \$2.7 billion over the next decade to slash acid gas emissions from its coal-fired generating stations.

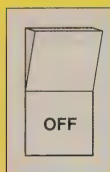
**W**

ill Evan and Andrew's generation do more to improve the environment? Canadians say they are concerned about the environment (89%), but say the concern hasn't changed their lifestyle (78%).



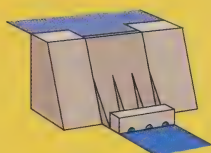
Evan, 8, and Andrew, 8.

#### CONSERVATION



25 %

#### HYDROELECTRIC



11 %

#### PRIVATE POWER



8 %

Together, conservation, hydro-electric stations and private power producers could provide over 40 per cent of new electricity requirements over the next 25 years.

The plan calls for the installation of flue gas scrubbers to remove sulphur dioxide at both the Lambton and Nanticoke generating stations, burning more low-sulphur coal and lignite, and retrofitting of larger stations with equipment to reduce nitrogen oxide emissions.

#### Hydroelectric generation

**Smoky Falls Generating Station** — Spruce Falls Power and Paper agreed to sell the Smoky Falls Generating Station, on the Mattagami River, to Ontario Hydro. Pending the obtaining of environmental approvals, the Smoky Falls purchase would allow Hydro to rebuild and extend the station, as well as install additional generating capacity for peaking purposes at the Little Long, Harmon and Kipling generating stations it operates on the Mattagami.

#### Alternative Energy

**Wind** — Hydro's 60-kilowatt wind turbine at Fort Severn on Hudson Bay entered its third year of operation in 1989. During September, energy produced by the turbine displaced 1,600 litres of diesel oil.

**Sun** — The 10-kilowatt photovoltaic demonstration installation at Big Trout Lake completed its third year of successful almost maintenance-free operation.

**Fusion** — Ontario Hydro's involvement in fusion is through the Canadian Fusion Fuels Technology Project. This project is jointly funded by the Federal Government, through Atomic Energy of Canada, the Government of Ontario and Ontario Hydro. Ontario Hydro manages the project.

**Transmission** — The first of two 500-kilovolt transmission lines between Lennox Generating Station and Ottawa Hawthorne Transformer Station went into service in October. The line makes the supply of electricity to the Ottawa area more secure. A second 500-kilovolt line is scheduled to go into service in November 1992. In September, approval was granted in principle for the construction of new transmission facilities in Northeastern Ontario. The facilities are needed to meet rapidly increasing loads in the region, incorporate a number of proposed private power projects with Hydro's system, and maintain a reliable supply of power to Spruce Falls Power and Paper in Kapuskasing.

**New System Control** — Construction of a new System Control Centre, at Clarkson near Toronto, neared completion at the end of 1989. The new centre will be ready to take over from the System Control Centre at Richview in December 1990.

**Research** — Ontario Hydro's Research Division continues to support the corporation's activities and assist the private sector. Help was given to industries by the installation of new and efficient electrical processes

such as electromagnetic aids to steel making, laser welding and cutting, and plasma material processing.

The division took part in a 1,000-home survey to help assess the maximum economic potential of window and heating system upgrades in existing dwellings.

## EMPLOYEES

**Health and Safety** — The Workplace Hazardous Materials Identification System, a federal government program to protect employees' health through education on hazardous materials, saw its first full year of operation in 1989. Hydro went beyond the program's legal requirements and introduced new corporate rules for managing hazardous agents.

Regrettably, an employee was killed on the job in 1989 in an accident at Kakabeka Falls Generating Station in Northwestern Ontario.

**Career centre** — As a result of the continuing studies at Hydro to improve organizational effectiveness and efficiency, a Career Centre was opened in January 1989 to assist employees with redeployment within the organization. A total of 547 people, of Hydro's approximately 25,000 regular staff, used the Centre's services last year, and approximately 90 per cent were employed elsewhere within Hydro.

**Suggestion program** — Hydro has offered its employees the chance to make suggestions. The TIPS (The Ideas People Suggest) suggestion program was launched in mid-year. By late 1989, TIPS had received more than 1,000 suggestions.





## FINANCIAL REVIEW OF ONTARIO HYDRO

for the year ended December 31, 1989

### FINANCIAL HIGHLIGHTS

Ontario Hydro's total revenues for 1989 came to \$6,346 million, \$533 million higher than in 1988. Approximately \$337 million of this increase came from the 1989 rate increase, and \$196 million from a greater volume of electricity sales. Total operating costs for 1989, including financing charges, amounted to \$5,647 million, an increase of \$460 million over 1988. This increase was due primarily to higher operating and maintenance costs and increased power purchases. Net income for 1989 was \$699 million compared with \$626 million for 1988.

The capital expenditures for investment in fixed assets during 1989 amounted to \$3,095 million. Cash provided from operations and available for investment in fixed assets was \$1,705 million for 1989.

### RESULTS OF OPERATIONS

#### Revenues

Primary revenues for 1989 amounted to \$6,255 million, an increase of \$598 million, or 10.6 per cent, over 1988. Electricity sales to municipal utilities, rural retail and direct industrial customers totalled 133,973 million kilowatt-hours as shown in the chart. The volume of primary energy grew by 4.6 per cent in 1989 because of continued economic growth in Ontario. Electricity use by rural retail customers rose more than the use by municipal utilities and direct customers.

The 1989 electricity rates increased 5.3 per cent on average. The average increase was 5.0 per cent for municipal utilities, 5.9 per cent for rural retail and 6.0 per cent for direct industrial customers. The rural rate increase takes into account \$105 million in assistance

provided by all electricity consumers in the province to reduce the electricity bills of year-round rural residential customers.

In 1989, Ontario Hydro introduced specific changes in the electricity rate structure. These changes include demand and energy rates for direct industrial customers and certain municipal utilities based on time-of-use and are designed to shift demand from peak periods to off-peak periods. The changes in rate structure will encourage a more efficient use of the bulk power system and offer Ontario Hydro customers the opportunity to control their costs by managing their own electricity use.

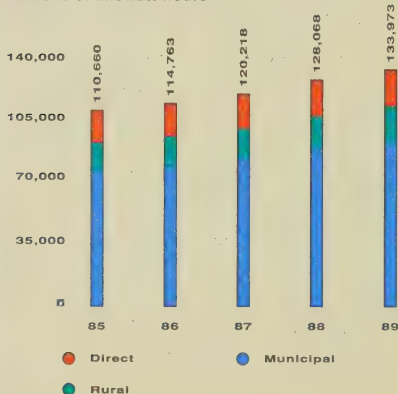
Secondary revenues for 1989, mainly from exporting electricity to utilities in the United States, came to \$91 million. Compared with 1988, this represents a decrease of \$65 million, or 41.7 per cent. This decrease is mainly attributable to reducing export sales to ensure Ontario Hydro's acid gas emissions were below 1988 levels.

Over the last five years, Ontario Hydro has sold approximately 28,000 million kilowatt-hours of electricity to utilities in the United States, but only after the needs of Ontario customers have been met. These sales have earned about \$1,031 million in secondary revenues. The net benefit to Ontarians was \$385 million for the period 1985 through 1989, and \$30 million in 1989. This benefit helped Ontario Hydro to keep electricity rates lower for Ontario customers.

#### Major Electricity Production Resources

Ontario Hydro responds to the energy demands of its customers by supplying electricity from a number of different sources. Hydraulic generating stations, which are relatively inexpensive to operate, have traditionally provided a large part of the electricity generated by Ontario Hydro. Although Ontario has vast water resources, little of the water has enough drop or flow to make it suitable for further hydraulic development. New development will be significant, but limited. Although the total capacity of hydraulic facilities has increased since the 1960s, hydraulic generation has formed a declining proportion of the system as a whole, which has grown substantially in the intervening period.

**PRIMARY ENERGY**  
Millions of kilowatt-hours



In order to meet the total energy needs of Ontario customers, Ontario Hydro has continued to increase its nuclear generating capacity. The increased capacity reduces the need to operate coal-fired generating units which have higher fuelling costs. However, fossil-fuelled generation, the other major source of electricity generation, will continue to be required during periods of higher demand which cannot be satisfied by less expensive generation. Ontario Hydro also purchases power and energy from neighbouring utilities as required.

On December 7, 1989, Ontario Hydro entered into a long-term contract with Manitoba Hydro to buy up to 1,000 MW of power starting in the year 2000 and continuing for 22 years. The contract is conditional upon certain governmental approvals which must be received by Ontario Hydro and Manitoba Hydro. It is expected that these approvals will be obtained.

Ontario Hydro is also placing greater emphasis on non-utility generation. Historically, there has been about 1,200 MW of non-utility generation connected directly or indirectly to Ontario Hydro's system, representing about 4 per cent of the Corporation's capacity. On May 1, 1989, Ontario Hydro issued its first request for proposals soliciting non-utility generation projects to be in-service by the end of 1993. Proposals are expected by early 1990. As of December 31, 1989, 32 non-utility generation projects totalling 111 MW are in operation. Developers of another 21 facilities totalling 343 MW have indicated they are committed to construction.

The production resources from 1985 through 1989, highlighting the changes in volume and generation mix, are shown in the chart. Nuclear stations supplied

45.6 per cent of the total energy to the system in 1989. Fossil-fuelled generation provided 24.7 per cent and hydraulic stations supplied 24.5 per cent. Purchased power provided the remaining 5.2 per cent. In 1988, of the total energy to the system, nuclear, hydraulic, fossil-fuelled and purchases supplied 48.4 per cent, 25.2 per cent, 24.9 per cent and 1.5 per cent, respectively. A breakdown of the annual average cost per kilowatt-hour of energy by major generating sources is shown in the Five-Year summary of Financial and Operating Statistics (see page 49).

## TOTAL OPERATING COSTS

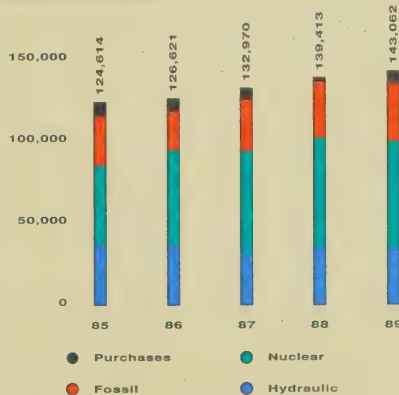
Ontario Hydro's total operating costs for 1989 were \$5,647 million, \$460 million or 8.9 per cent higher than in 1988. The chart shows major operating costs for the period 1985 through 1989.

### Operation, Maintenance and Administration

In 1989, operation, maintenance and administration costs amounted to \$1,534 million, an increase of \$180 million over 1988. This increase of 13.3 per cent related primarily to escalation in labour and other costs, and the impact of the return to operation of Pickering unit 2 and Lennox unit 4 in November 1988. The transmission and distribution system work-load also grew in 1989, as reflected in an increase of about 3 per cent in the number of customers and an increase of about 1 per cent in the kilometres of rural lines maintained.

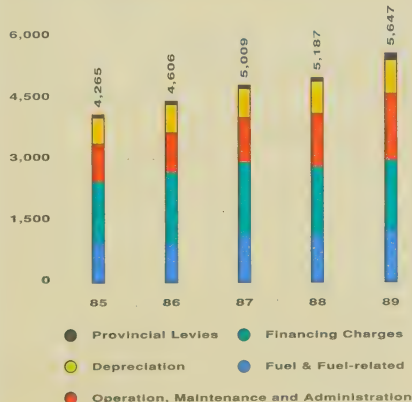
## ELECTRICITY PRODUCTION

Millions of Kilowatt-Hours



## TOTAL OPERATING COSTS

Millions of Dollars



### Fuel and Fuel Related Costs

In 1989, fuel and the related costs of power purchased and Nuclear Agreement - Payback, were 14.5 per cent higher than in 1988.

The 1989 fuel costs for coal, uranium, oil and water rental payments other than to the Province of Ontario came to \$1,132 million, \$10 million higher than in 1988. The impact of costs associated with the slightly higher level of fossil-fuelled generation required as a result of higher primary energy sales was partially offset by the lower unit cost of coal consumed.

In 1989, Ontario Hydro purchased \$230 million worth of electricity from neighbouring utilities, an increase of \$173 million from 1988. Ontario Hydro buys electricity when it is economical to do so and during periods of peak demand or in emergencies. In 1989, purchases were used to meet higher primary sales and ensure acid gas emissions were below 1988 levels.

In 1989, the Nuclear Agreement - Payback amount charged to operations was \$1 million, a \$10 million decrease from 1988.

### Provincial Government Levies

Provincial government levies are payments made to the Province of Ontario with respect to the debt guarantee fee and water rentals.

In 1989 the Province of Ontario legislated that Ontario Hydro is required to pay to the Province an annual debt guarantee fee of one half of one per cent on the total outstanding debt guaranteed by the Province as of the preceding December 31. The fee for 1989 amounted to \$82 million and reflects the fact that the charge came into effect in May 1989.

Provincial water rental payments for the use of provincial waters by Ontario Hydro in its hydraulic plants, amounted to \$95 million in 1989, an increase of \$4 million over 1988. The increased payments reflect the impact of higher water rental rates and higher hydraulic generation in 1989 over 1988.

In addition to Provincial Government Levies, Ontario Hydro also made, similar to other businesses, payments to various government agencies of approximately \$230 million in 1989. These payments include payments in lieu of taxes to municipalities, provincial and federal sales taxes, Unemployment Insurance Commission premiums and Canada Pension Plan contributions.

### Depreciation

The depreciation charged to operations totalled \$845 million in 1989, \$34 million or 4.2 per cent higher than in 1988. The increase reflects the revision in estimates related to provisions for fixed asset removal

costs. The higher provisions were partially offset by the impact of extending the estimated service lives of fossil generating stations to 40 years from 30 to 35 years.

### Financing Charges

Financing charges are comprised of interest charged to operations and foreign exchange costs. Interest charged to operations represents gross interest reduced by capitalized interest and by interest earned on investments. By capitalizing interest, costs are properly allocated between current and future customers. Foreign exchange represents mainly the amortization of gains or losses on the principal amount of foreign debt and the net exchange loss on foreign transactions other than foreign debt.

Gross interest costs for 1989 amounted to \$3,016 million, an increase of \$172 million or 6.0 per cent over 1988. The primary reason for this increase is related to additional funds borrowed during the year to finance construction of Darlington Generating Station. This increase was partially offset by the effect of the stronger Canadian dollar relative to the United States dollar on foreign currency interest payments and refinancing debt that matured during the year at lower interest rates.

Interest charged to operations amounted to \$1,697 million in 1989, \$43 million or 2.5 per cent lower than in 1988. The decrease resulted primarily from increased interest income on cash and temporary investments.

Foreign exchange costs amounted to \$31 million in 1989, an increase of \$30 million from 1988. The increase was due primarily to the early redemption of United States dollar long-term debt which was refinanced with Canadian dollar debt, and higher foreign currency hedging activity costs.

### NET INCOME/FINANCIAL INDICATORS

Ontario Hydro's net income was \$699 million in 1989, compared to \$626 million in 1988. The Corporation's main financial indicators are the cash flow coverage, interest coverage and debt ratios. The cash flow coverage ratio for 1989 was 1.16 compared to 1.19 for 1988. The level of interest coverage for 1989 was 1.24 compared to 1.23 for 1988. The debt ratio at the end of 1989 improved to .817 from the 1988 ratio of .829. The 1989 debt ratio is at the lowest level since 1974. The financial position of Ontario Hydro remains strong.

## CAPITAL EXPENDITURES AND FINANCING

### Investment in Fixed Assets

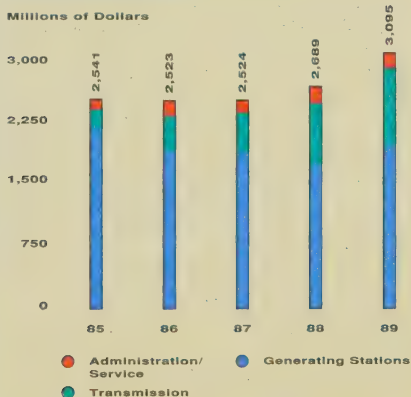
Ontario Hydro invests in fixed assets to meet expected growth in the demand for electricity, to replace existing assets with facilities that are more economical and to meet regulatory requirements. The total assets of the Corporation at the end of 1989 were \$36,277 million, 89 per cent consisting of fixed assets in service or under construction. This relatively high per centage reflects the capital intensive nature of Ontario Hydro's business.

The investment in fixed assets during 1989 totalled \$3,095 million. Of this amount, \$1,441 million went toward the construction of facilities at Darlington. The four nuclear generating units at Darlington are expected to be placed in service over the period 1990 to 1992. In addition, the 1989 expenditures reflect continued emphasis on investment in the transmission and distribution facilities to keep the quality and reliability of service high. During 1989, \$938 million went toward constructing major transmission and distribution facilities, such as the 500 kilovolt transmission lines in southwestern Ontario and the Longwood Transformer Station.

The annual investment in fixed assets from 1985 through 1989 are shown in the chart. The level of investment in fixed assets for 1989 was somewhat higher than the average of the previous four years. The increase reflects a higher level of investment in the transmission and distribution facilities.

#### INVESTMENT IN FIXED ASSETS DURING THE YEAR

Millions of Dollars



### Financing

The cash required by Ontario Hydro to finance its investment in fixed assets comes from two major sources: operations and external borrowings. For 1989, operations provided \$1,705 million and net borrowings provided \$662 million. The cash provided from financing consists of cash from the issuance of long-term debt and the change in the level of short-term notes payable issued for debt management purposes, less the amount of cash used to retire long-term debt.

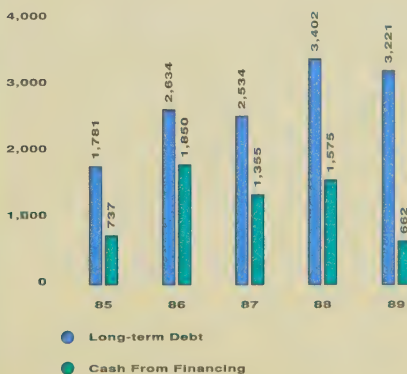
The proceeds from bonds sold by Ontario Hydro to the public during 1989 amounted to \$2,570 million. In addition, bonds issued to the Province of Ontario provided a further \$651 million. In total, there were eleven Canadian and one Euro-Canadian issues with an average annual coupon interest rate of 10.4 per cent for an average term to maturity of 11.8 years. For the same period in 1988, the average annual coupon interest rate was 10.3 per cent for an average term to maturity of 9.3 years.

Cash provided from financing from 1985 through 1989 is shown in the chart. Since 1985, financing requirements have been met primarily from the Canadian public market and from Canada Pension Plan funds, thereby not incurring new foreign exchange exposure.

Cash amounting to \$1,656 million was used to retire maturing long-term debt in 1989, compared with \$1,191 million in 1988. Cash amounting to \$403 million was used to redeem debt prior to maturity in 1989, compared with \$636 million in 1988. Of the debt redeemed prior to maturity in 1989, \$197 million was used to redeem United States dollar issues which were called during the year. In addition, the level of short-term notes payable issued for debt management purposes decreased by \$500 million in 1989.

#### CASH PROVIDED FROM FINANCING

Millions of Dollars





## MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL REPORTING

The accompanying financial statements of Ontario Hydro are the responsibility of management and have been prepared in accordance with accounting principles generally accepted in Canada, applied on a basis consistent with that of the preceding year. The significant accounting policies followed by Ontario Hydro are described in the Summary of Significant Accounting Policies. The preparation of financial statements necessarily involves the use of estimates based on management's judgement, particularly when transactions affecting the current accounting period cannot be finalized with certainty until future periods. The financial statements have been properly prepared within reasonable limits of materiality and in light of information available up to March 12, 1990. The information presented elsewhere in the Annual Report is consistent with that in the financial statements.

Management maintains a system of internal controls designed to provide reasonable assurance that the assets are safeguarded and that reliable financial information is available on a timely basis. The system includes formal policies and procedures and an organizational structure that provides for appropriate delegation of authority and segregation of responsibilities. An internal audit function independently evaluates the effectiveness of these internal controls on an ongoing basis and reports its findings to management and the Audit Committee of the Board of Directors.

The financial statements have been examined by Ernst & Young, independent external auditors appointed by the Lieutenant Governor in Council of Ontario. The external auditors' responsibility is to

express their opinion on whether the financial statements are fairly presented in accordance with generally accepted accounting principles. The Auditors' Report, which appears below, outlines the scope of their examination and their opinion.

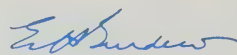
The Board of Directors, through the Audit Committee, is responsible for ensuring that management fulfills its responsibilities for financial reporting and internal controls. The Audit Committee meets periodically with management, the internal auditors and the external auditors to satisfy itself that each group has properly discharged its respective responsibility, and to review the financial statements before recommending approval by the Board of Directors. The external auditors have direct and full access to the Audit Committee, with and without the presence of management, to discuss their audit and their findings as to the integrity of Ontario Hydro's financial reporting and the effectiveness of the system of internal controls.

On behalf of Management



Chairman, President and  
Chief Executive Officer

Toronto, Canada,  
March 12, 1990



Senior Vice-President  
Finance and Services

## AUDITORS' REPORT

### To the Board of Directors of Ontario Hydro:

We have examined the statement of financial position of Ontario Hydro as at December 31, 1989 and the statements of operations, accumulated debt retirement appropriations, reserve for stabilization of rates and contingencies and source of cash used for investment in fixed assets for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these financial statements present fairly the financial position of Ontario Hydro as at December 31, 1989 and the results of its operations and the changes in financial position for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Toronto, Canada,  
March 12, 1990



Chartered Accountants



## SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying financial statements have been prepared in accordance with accounting principles generally accepted in Canada, applied on a basis consistent with that of the preceding year. The significant accounting policies followed by Ontario Hydro are described below.

### Rate setting

Ontario Hydro has broad powers to generate, supply and deliver electric power throughout the Province of Ontario. The Corporation operates under the Power Corporation Act and is subject to provisions of the Ontario Energy Board Act.

Under the provisions of the Power Corporation Act, the price payable by municipal corporations is the cost of operating and maintaining the system, depreciation, interest, and the amounts appropriated for debt retirement and stabilization of rates and contingencies. The debt retirement appropriation is the amount required under the Act to accumulate on a sinking fund basis over 40 years a sum equal to the debt incurred for the cost of the fixed assets in service. The appropriation for, or withdrawal from, the stabilization of rates and contingencies reserve is an amount established to maintain a sound financial position and to stabilize the effect of cost fluctuations.

Under the provisions of the Ontario Energy Board Act, a public hearing before the Ontario Energy Board is required in respect of any changes in electricity rates proposed by Ontario Hydro which affect its municipal utilities, direct industrial customers, or, if the Minister of Energy so directs, rural retail customers. The Ontario Energy Board submits its recommendations to the Minister of Energy. After considering the recommendations of the Ontario Energy Board, the Board of Directors of Ontario Hydro, under the authority of the Power Corporation Act, establishes the electricity rates to be charged to customers.

If the Board of Directors specifies an amount related to a certain transaction be included in future electricity rates that, in accordance with the account-

ing policies summarized below, would be charged or credited to operations in the current year, then this amount is deferred and amortized to future operations on a basis consistent with its inclusion in rates.

### Fixed assets

Fixed assets in service include operating facilities and non-operating reserve facilities. Construction in progress includes fixed assets under construction and heavy water held for use in nuclear generating stations under construction.

Fixed assets are capitalized at cost which comprises material, labour, engineering costs, overheads, depreciation on service equipment, interest applicable to capital construction activities, and for new facilities, the costs of training initial operating staff. In the case of generation facilities, the cost also includes the net cost of commissioning which comprises the cost of start-up less the value attributed to energy produced by generation facilities during their commissioning period. For multi-unit facilities, a proportionate share of the cost of common facilities is placed in service with each major operating unit. The cost of heavy water comprises the direct cost of production and applicable overheads, as well as interest and depreciation on the heavy water production facilities and the estimated removal costs of these facilities. Leases which transfer the benefits and risks of ownership of assets to Ontario Hydro are capitalized.

Interest is capitalized on construction in progress at rates (1989 - 10.8 per cent, 1988 - 10.8 per cent) which approximate the average cost of long-term funds borrowed in the years in which expenditures have been made for fixed assets under construction. If the construction period of a project is extended and the construction activities are continued, interest is capitalized during the period of extension provided that the project has a reasonable expectation of being completed.

If a project is cancelled or deferred indefinitely with a low probability of construction being resumed, all costs including the costs of cancellation are written off to operations.

If fixed assets are removed from operations and mothballed for future use, termed non-operating reserve facilities, the costs of mothballing are charged to operations.

### Depreciation

The capital costs of fixed assets in service are depreciated on a straight-line basis. Depreciation rates for the various classes of assets are based on their estimated service lives. Major components of generating stations are depreciated over the lesser of the service life expectancy of the component or the remaining service life of the associated generating station.

The estimated service lives of assets in the major classes are:

Generating stations	
- hydraulic	- 65 to 100 years
- fossil	- 40 years (1988 - 30 to 35 years)
- nuclear	- 40 years
Heavy water	- over the period ending in the year 2040
Transmission and distribution facilities	- 20 to 55 years
Heavy water production facilities	- 20 years
Administration and service facilities	- 5 to 65 years

In accordance with group depreciation practices, for normal retirements the cost of fixed assets retired is charged to accumulated depreciation with no gain or loss being reflected in operations. However, gains and losses on sales of fixed assets, and losses on premature retirements are charged to operations in the year incurred as adjustments to depreciation expense.

When the costs of removal less residual value, termed removal costs, on retirements of fixed assets can be reasonably estimated and are significant, provisions for these costs, except for those related to heavy water production facilities, are charged to depreciation expense on an annuity basis over the remaining service life of the related fixed assets. For heavy water production facilities, provisions for removal costs are charged to heavy water production costs on a straight-line basis over the remaining service life of the related facilities. Other removal costs are charged to depreciation expense as incurred. Removal costs include the estimated costs of decommissioning nuclear and fossil stations and heavy water production facilities, and the estimated costs of removing certain nuclear reactor fuel channels.

The estimated service lives of fixed assets and the significant assumptions underlying the estimates of fixed asset removal costs are subject to periodic review. Any changes arising out of such a review are implemented on a remaining service life basis from the year the changes can be first reflected in electricity rates.

Non-operating reserve facilities are amortized so that any estimated loss in value is charged to depreciation expense on a straight-line basis over their expected non-operating period.

### **Unamortized advances for fuel supplies**

As part of its program to ensure the adequate supply of fuels for its generating stations, Ontario Hydro has entered into long-term fuel supply contracts. Where these contracts require Ontario Hydro to make payments for pre-production costs to suppliers in advance of the fuel delivery, these payments and associated costs, including interest, are carried in the accounts as unamortized advances for fuel supplies. The advances are amortized to fuel inventory as the fuels are delivered.

### **Fuel for electric generation**

Fuel used for electric generation comprises the average inventory costs of fuel consumed, charges for commissioning energy produced, and provisions for disposal of nuclear fuel irradiated during the period. The inventory cost of fuel consumed comprises fuel purchases, transportation and handling costs, and the amortization of advances for fuel supplies. Transportation costs include charges for interest and depreciation on railway equipment owned by Ontario Hydro. The charges for commissioning energy produced during the period represent the incremental operating and fuel costs of producing the same quantity of energy at generating units displaced because of the commissioning activity. The costs for disposal of nuclear fuel irradiated in each period are charged to operations based on estimated future expenditures and interest accumulating to the estimated date of disposal. Estimates of expenditures, interest and escalation rates, and the date of disposal are subject to periodic review. Adjustments resulting from changes in estimates are charged to operations on an annuity basis over the period from the year the changes can be first reflected in electricity rates to the estimated in-service date of the disposal facility.

### **Foreign currency translation**

Current monetary assets and liabilities in foreign currencies are translated to Canadian currency at year-end rates of exchange and the resultant exchange gains or losses are credited or charged to operations. Long-term debt payable in foreign currencies is translated to Canadian currency at year-end rates of exchange. Resulting unrealized exchange gains or losses are deferred and included in unamortized debt costs, and are amortized to operations on an annuity basis over the remaining life of the related debt.

Foreign exchange gains or losses on hedges of long-term debt payable in foreign currencies are deferred and included in unamortized debt costs. The deferred gains or losses related to principal payments are amortized to operations on an annuity basis over the remaining period to the year in which the hedged principal payments are due. The deferred gains or losses related to interest payments are credited or charged to operations in the year in which the hedged interest payments are due.

Foreign exchange gains or losses on early redemption of long-term debt are deferred and included in unamortized debt costs if the exposure in the foreign currency related to the redeemed debt is not reduced as a result of the refinancing of the redeemed debt in the same currency. These deferred gains or losses are amortized on an annuity basis over the period to the original maturity date of the redeemed debt. If the foreign currency exposure is reduced as a result of the early redemption of debt, the resulting foreign exchange gains or losses related to the redeemed debt are credited or charged to operations.

### **Unamortized debt costs**

Unamortized debt costs include the unamortized amounts related to unrealized foreign exchange gains or losses resulting from the translation of foreign currency long-term debt, foreign exchange gains or losses on hedges, foreign exchange gains or losses on the early redemption of long-term debt, discounts or premiums arising from the issuance of debt or the acquisition of debt prior to maturity, and discounts or premiums accrued on foreign currency hedges.

Debt discounts or premiums arising from the issuance of debt are amortized over the period to maturity of the debt. Discounts or premiums on debt acquired prior to the date of maturity are amortized over the period from the acquisition date to the original maturity date of the debt. Discounts or premiums on foreign currency hedges are credited or charged to operations over the terms of the individual hedges.

### **Nuclear agreement - payback**

Ontario Hydro, Atomic Energy of Canada Limited and the Province of Ontario are parties to a joint undertaking for the construction and operation of units 1 and 2 of Pickering Nuclear Generating Station, with ownership of these units being vested in Ontario Hydro. Contributions to the capital cost by Atomic Energy of Canada Limited and the Province of Ontario amounted to \$258 million and these have been deducted in arriving at the value of fixed assets in service in respect of Pickering units 1 and 2.

Ontario Hydro is required to make monthly payments, termed "payback", until the year 2003 to each of the parties in proportion to their capital contributions. Payback represents in a broad sense the net operational advantage of having the power generated by Pickering units 1 and 2 as compared with coal-fired units similar to Lambton units 1 and 2.

During the 1983 through 1988 shutdown period for replacement of pressure tubes in Pickering units 1 and 2, the payback calculations resulted in negative payback amounts. These amounts have been credited against the cost of operations over the shutdown period and the accumulated amounts, plus interest, are included in the accounts as long-term accounts receivable. The accumulated negative payback amounts, plus interest, are to be offset against future positive payback amounts payable over the remaining term of the Agreement to Atomic Energy of Canada Limited and to the Province of Ontario, commencing with the return to operation of the last of the two units in November 1988.

### **Pension plan**

The pension plan is a contributory, defined benefit plan covering all regular employees of Ontario Hydro. Pension costs for accounting purposes are actuarially determined based on the assumptions that reflect management's best estimate of the effect of future events on the actuarial present value of accrued pension benefits, and the valuation of pension plan assets using a five-year market value average. Pension plan surpluses and deficiencies are amortized on an annuity basis over the expected average remaining period of service of the employees covered by Ontario Hydro's pension plan.

### **Research and development**

Research and development costs are charged to operations in the year incurred, except for those related directly to the design or construction of a specific capital facility which are capitalized as part of the facility.

## STATEMENT OF OPERATIONS

for the year ended December 31, 1989

1989

1988

*millions of dollars***Revenues**

## Primary power and energy

Municipal utilities	4,209	3,824
Rural retail customers	1,256	1,103
Direct industrial customers	790	730

6,255 5,657

## Secondary power and energy (note 1)

91 156

6,346 5,813

**Costs**

## Operation, maintenance and administration

1,534 1,354

## Fuel used for electric generation

1,132 1,122

## Power purchased

230 57

## Nuclear agreement - payback

1 11

## Provincial government levies (note 2)

177 91

## Depreciation (note 3)

845 811

3,919 3,446

**Income before financing charges**

2,427 2,367

## Interest (note 4)

1,697 1,740

## Foreign exchange (note 5)

31 1

1,728 1,741

**Net income**

699 626

**Appropriation for:**

## Debt retirement

357 341

## Stabilization of rates and contingencies

342 285

699 626

See accompanying summary of significant accounting policies and notes to financial statements.



## STATEMENT OF FINANCIAL POSITION

as at December 31, 1989

1989

1988

*millions of dollars***Assets****Fixed assets** (note 6)

Fixed assets in service	27,786	26,918
Less accumulated depreciation	7,017	6,289
	20,769	20,629
Construction in progress	11,593	9,346
	32,362	29,975

**Current assets**

Cash and temporary investments	—	312
Accounts receivable	788	663
Fuel for electric generation (note 7)	1,108	1,113
Materials and supplies, at cost	339	332
	2,235	2,420

**Other assets**

Unamortized debt costs	218	324
Unamortized advances for fuel supplies (note 8)	728	755
Unamortized deferred costs (note 9)	313	401
Long-term accounts receivable and other assets	421	483
	1,680	1,963
	36,277	34,358

See accompanying summary of significant accounting policies and notes to financial statements.

	1989	1988
	<i>millions of dollars</i>	
<b>Liabilities</b>		
<b>Long-term debt</b> (note 10)	<b>25,141</b>	24,240
<b>Current liabilities</b>		
Bank indebtedness (note 11)	<b>356</b>	—
Accounts payable and accrued charges	<b>919</b>	664
Short-term notes payable	—	500
Accrued interest	<b>742</b>	714
Long-term debt payable within one year	<b>1,661</b>	1,665
	<b>3,678</b>	3,543
<b>Other liabilities</b>		
Long-term accounts payable and accrued charges	<b>222</b>	216
Accrued fixed asset removal and irradiated fuel disposal costs (note 12)	<b>949</b>	771
	<b>1,171</b>	987
<b>Contingencies</b> (notes 8 and 14)		
<b>Equity</b>		
Accumulated debt retirement appropriations	<b>3,927</b>	3,570
Reserve for stabilization of rates and contingencies	<b>2,233</b>	1,891
Contributions from the Province of Ontario as assistance for rural construction	<b>127</b>	127
	<b>6,287</b>	5,588
	<b>36,277</b>	34,358

On behalf of the Board



Chairman, President and  
Chief Executive Officer



Vice-Chairman

Toronto, Canada,  
March 12, 1990

## STATEMENT OF ACCUMULATED DEBT RETIREMENT APPROPRIATIONS

for the year ended December 31, 1989

	Municipal Utilities	Power District (Rural Retail and Direct Industrial Customers)	1989	Total 1988
<i>millions of dollars</i>				
Balances at beginning of year	2,478	1,092	3,570	3,229
Appropriation	241	116	357	341
Balances at end of year	2,719	1,208	3,927	3,570

## STATEMENT OF RESERVE FOR STABILIZATION OF RATES AND CONTINGENCIES

for the year ended December 31, 1989

	Held for the benefit of all customers		Held for the benefit of (or recoverable from) certain groups of customers		Total
		Municipal Utilities	Rural Retail Customers	Direct Industrial Customers	
<i>millions of dollars</i>					
Balances at beginning of year	1,906	1	(15)	(1)	1,891
Appropriation	311	—	28	3	342
Balances at end of year	2,217	1	13	2	2,233

See accompanying summary of significant accounting policies and notes to financial statements.

## STATEMENT OF SOURCE OF CASH USED FOR INVESTMENT IN FIXED ASSETS

for the year ended December 31, 1989	1989	1988
	<i>millions of dollars</i>	
<b>Cash provided from operations</b> (note 13)	<b>1,705</b>	1,368
<b>Cash provided from financing</b>		
Long-term debt issued	<b>3,221</b>	3,402
Change in short-term notes payable issued for debt management purposes - (decrease)	<b>(500)</b>	-
	<b>2,721</b>	3,402
Less long-term debt retired	<b>2,059</b>	1,827
Cash provided from financing	<b>662</b>	1,575
Cash used for investment in other assets (note 13)	<b>(43)</b>	(45)
Cash provided from operations, financing and other activities	<b>2,324</b>	2,898
Changes in cash and cash equivalents		
- decrease (increase) (note 13)	<b>668</b>	(225)
Cash used for investment in fixed assets	<b>2,992</b>	2,673
Changes in accounts payable and accrued charges affecting investment in fixed assets - increase	<b>103</b>	16
<b>Investment in fixed assets</b> (note 13)	<b>3,095</b>	2,689

See accompanying summary of significant accounting policies and notes to financial statements.

## NOTES TO FINANCIAL STATEMENTS

**1. Secondary power and energy**

Secondary power and energy revenues include \$87 million (1988 - \$153 million) from sales of electricity to United States utilities.

**2. Provincial government levies**

	1989	1988
	<i>millions of dollars</i>	
Provincial water rentals	95	91
Provincial debt guarantee fee	82	-
	<u>177</u>	<u>91</u>

Provincial government levies are the amounts charged by the Ontario Provincial Government for the debt guarantee fee and water rentals.

**Provincial water rentals**

Provincial water rentals are the amounts paid to the Province of Ontario for the use of water for hydraulic generation.

**Provincial debt guarantee fee**

In May 1989, the Province of Ontario legislated that Ontario Hydro is required to pay to the Province an annual debt guarantee fee of one half of one per cent on the total outstanding debt guaranteed by the Province as of the preceding December 31. For 1989, the fee of \$82 million dollars reflects the fact that the fee came into effect in May 1989.

**3. Depreciation**

	1989	1988
	<i>millions of dollars</i>	
Depreciation of fixed assets in service	792	774
Amortization of deferred costs	40	40
Fixed asset removal costs		
- provision for fuel channel removal costs	77	39
- provision for decommissioning costs	33	34
- other removal costs	22	25
	<u>964</u>	<u>912</u>
Less:		
Depreciation charged to		
- heavy water production	51	51
- construction in progress	53	44
- fuel for electric generation	2	2
Net gain on sales of fixed assets	13	4
	<u>119</u>	<u>101</u>
	<u>845</u>	<u>811</u>

**4. Interest**

	1989	1988
	<i>millions of dollars</i>	
Interest on bonds, notes, and other debt	2,932	2,780
Interest on accrued fixed asset removal and irradiated fuel disposal costs	84	65
	<u>3,016</u>	<u>2,845</u>
Less:		
Interest charged to		
- construction in progress	1,016	836
- heavy water production	77	86
- fuel for electric generation	82	90
Interest earned on investments	144	93
	<u>1,319</u>	<u>1,105</u>
	<u>1,697</u>	<u>1,740</u>



**5. Foreign exchange**

	1989	1988
	<i>millions of dollars</i>	
Amortization of foreign exchange gains and losses	(52)	(61)
Net exchange loss on other foreign transactions	83	62
	<u>31</u>	<u>1</u>

**6. Fixed assets**

	1989		
	Assets in Service	Accumulated Depreciation	Construction in Progress
	<i>millions of dollars</i>		
Generating stations			
- hydraulic	1,923	657	51
- fossil	3,732	1,539	169
- nuclear	10,874	1,785	8,837
Heavy water	2,507	294	1,316
Transmission and distribution	6,197	1,641	1,122
Heavy water production facilities	1,127	498	-
Administration and service facilities	1,426	603	98
	<u>27,786</u>	<u>7,017</u>	<u>11,593</u>
	1988		
	Assets in Service	Accumulated Depreciation	Construction in Progress
	<i>millions of dollars</i>		
Generating stations			
- hydraulic	1,899	628	33
- fossil	3,707	1,447	66
- nuclear	10,805	1,474	7,258
Heavy water	2,447	252	1,140
Transmission and distribution	5,663	1,511	730
Heavy water production facilities	1,126	445	-
Administration and service facilities	1,271	532	119
	<u>26,918</u>	<u>6,289</u>	<u>9,346</u>

Fossil generating stations in service include non-operating reserve facilities. As at December 31, 1988, substantially all of the undepreciated cost of the non-operating reserve facilities pertained to Lennox unit 3. On December 20, 1989, Lennox unit 3 returned to operation.

A major portion of the construction in progress as at December 31, 1989, relates to the construction program for the Darlington Nuclear Generating Station. The costs associated with this construction program, including heavy water, amounted to \$9,885 million as at December 31, 1989 (1988 - \$8,209 million). The four generating units at Darlington are planned to be

placed in service over the period 1990 through 1992 and will provide 3,524 megawatts of dependable capacity. The estimated cost to complete the Darlington construction program is \$2,526 million, including cost escalation and interest of approximately \$1,582 million. Cost escalation and interest are forecast to average 5% and 10.5% per year, respectively, over the period 1990 to 1992. Because of the uncertainties associated with long construction lead times and planned in-service dates, the estimated cost to complete is subject to change.

**7. Fuel for electric generation**

	1989	1988
	<i>millions of dollars</i>	
Inventories		
- uranium	700	668
- coal	396	418
- oil	12	27
	<b>1,108</b>	<b>1,113</b>

**8. Unamortized advances for fuel supplies**

	1989	1988
	<i>millions of dollars</i>	
Uranium		
- Rio Algom Limited	406	414
- Denison Mines Limited	322	334
	<b>728</b>	<b>748</b>
Coal	-	7
	<b>728</b>	<b>755</b>

Unamortized advances for fuel supplies are recovered as fuel is delivered. Over the next five years, the amortization of advances for uranium supplies will be about \$33 million for the contract with Rio Algom Limited and about \$64 million for Denison Mines Limited.

Ontario Hydro has long-term contracts with Denison Mines Limited and Rio Algom Limited for uranium supplies through to 2012 and 2027, respectively. Ontario Hydro's current forecast of the annual requirements for uranium is about 1,700 megagrams for 1990, increasing to about 1,800 megagrams by 1994. The uranium inventory as at December 31, 1989, plus the contracted deliveries through to the

end of 1993 exceed the forecasted requirements to the end of 1993 by about 400 megagrams. Starting in 1994 through to 2012, contracted deliveries exceed forecasted requirements of the nuclear generating facilities currently in service and under construction by about 1,000 megagrams per year. Ontario Hydro's options for managing the oversupply include resale of the uranium and, under specified conditions, cancellation or renegotiation of the contracts. In the event that a contract is cancelled, the supplier is not required to refund any outstanding advances. At this time, the outcome with respect to managing the oversupply of uranium is not determinable.

**9. Unamortized deferred costs**

	1989	1988
	<i>millions of dollars</i>	
Bruce Heavy Water Plant "D"	148	185
Wesleyville Generating Station	10	15
	<b>158</b>	<b>200</b>
Fuel oil contract	87	116
Coal Purchase Agreement	68	85
	<b>313</b>	<b>401</b>

Unamortized deferred costs are amounts that the Board of Directors, under its rate setting authority, has determined be deferred and amortized for recovery through electricity rates on a straight-line basis over a specified period of years. The nature of these costs are described below.

- Bruce Heavy Water Plant "D" is an indefinitely deferred project with a low probability of construc-

tion being resumed. The capital cost of this project and the unamortized deferred costs associated with the cancelled Wesleyville Generating Station project are being amortized over the period 1984 through 1993. Accordingly, \$40 million was charged to depreciation in 1989.

### 9. Unamortized deferred costs (continued)

- Under the terms of the settlement reached by Ontario Hydro and Petrosar Limited in 1987 with respect to a fuel oil contract, Ontario Hydro paid \$150 million to Petrosar Limited and the parties released each other from all obligations and claims related to the contract. The net cost of this settlement is being amortized over the period 1988 through 1992. Accordingly, \$29 million was charged to fuel used for electric generation in 1989.
- In November 1987, Ontario Hydro provided USX Corporation with notification of cancellation of the Coal Purchase Agreement pursuant to the three year notice period provision in the Agreement. On

cancellation of the Agreement, USX Corporation is not required to refund any outstanding pre-production payments made in advance of the coal deliveries to Ontario Hydro. The outstanding advances and associated costs as at the date of cancellation of the Agreement were estimated to be \$85 million and are to be amortized over the period 1989 through 1993. Accordingly, during 1989, \$17 million was charged to fuel used for electric generation. In December 1989, Ontario Hydro and USX Corporation agreed to cancel the Agreement as of December 31, 1989 and the net cost of settlement payable by Ontario Hydro was charged to fuel used for electric generation in 1989.

### 10. Long-term debt

	1989	1988
	<i>millions of dollars</i>	
Bonds and notes payable	<b>26,694</b>	25,775
Other long-term debt	<b>108</b>	130
	<b>26,802</b>	25,905
Less payable within one year	<b>1,661</b>	1,665
	<b>25,141</b>	24,240

Bonds and notes payable, expressed in Canadian dollars, are summarized by years of maturity and by the currency in which they are payable in the following table:

Years of Maturity	1989			Weighted Average Coupon Rate	1988	
	Principal Outstanding		Total		Principal Outstanding	Weighted Average Coupon Rate
	Canadian	Foreign			Total	
	millions of dollars			per cent	millions of dollars	per cent
1989	—	—	—		1,644	
1990	1,018	621	1,639		1,668	
1991	1,372	273	1,645		1,675	
1992	1,136	900	2,036		1,910	
1993	2,781	41	2,822		2,587	
1994	1,328	563	1,891		—	
1 - 5 years	7,635	2,398	10,033	11.0	9,484	10.9
6 - 10 years	4,868	548	5,416	9.6	5,256	10.2
11 - 15 years	3,084	567	3,651	11.6	3,245	11.9
16 - 20 years	3,023	2,345	5,368	10.0	4,726	9.8
21 - 25 years	1,326	900	2,226	13.5	3,064	12.6
	19,936	6,758	26,694	10.8	25,775	10.9

Currency in which payable:

Canadian dollars	<b>19,936</b>	17,905
United States dollars	<b>6,753</b>	7,858
United Kingdom pounds sterling	<b>5</b>	12
	<b>26,694</b>	25,775

Bonds and notes payable are either held, or guaranteed as to principal and interest, by the Province of Ontario.

### 10. Long-term debt (continued)

Bonds and notes payable in United States dollars include Canadian \$5,096 million (1988 - Canadian \$5,689 million) of Ontario Hydro bonds held by the Province of Ontario and having terms identical with Province of Ontario issues sold in the United States on behalf of Ontario Hydro.

Ontario Hydro has entered into financial arrangements to hedge a portion of the foreign currency exposure related to principal and interest payments with respect to long-term debt and these arrangements are primarily in forward exchange contracts. These contracts amounted to United States \$1,995 million as at December 31, 1989 (1988 - United States \$2,198 million), having a weighted average Canadian dollar exchange rate of 1.26 (1988 - 1.26).

These financial arrangements hedge principal and interest payments amounting to United States \$876 million due in 1990 and the remaining United States \$1,119 million hedge principal and interest payments due over the period 1991 through 1998.

Ontario Hydro has entered into interest rate swap arrangements amounting to Canadian \$120 million in notional principal as at December 31, 1989 (1988 - Canadian \$1,380 million), expiring in 1991 through 1994 (1988 - 1989 to 1993). These arrangements have effectively converted fixed interest rates on long-term debt, having a weighted average coupon rate of 11.2% (1988 - 10.0%), to variable interest rates which are adjusted quarterly to the prevailing Canadian bankers' acceptance rate.

Other long-term debt:	Years of Maturity	Interest Rate	1989	1988
		<i>per cent</i>		<i>millions of dollars</i>
Balance due to Atomic Energy of Canada Limited on purchase of Bruce Heavy Water Plant "A"	1992	7.8	67	87
Capitalized lease obligation for the Head Office building, payable in U.S. dollars	2005	8.0	40	42
Capitalized lease obligations for transport and service equipment	1990 to 1994	6.3 to 11.9	1	1
			<b>108</b>	<b>130</b>

Payments required on the above debt, excluding interest, will total \$76 million over the next five years. The amount payable within one year is \$22 million (1988 - \$21 million).

### 11. Bank indebtedness

Bank indebtedness includes short-term bank lines of credit available to Ontario Hydro in the amount of \$600 million. The lines of credit are unsecured and bear interest at the Canadian prime rate.

**12. Accrued fixed asset removal and irradiated fuel disposal costs****1989****1988***millions of dollars*

## Accrued fixed asset removal costs

- accrued decommissioning costs
- accrued fuel channel removal costs

**267** 212**250** 194**517** 406

## Accrued irradiated fuel disposal costs

**432** 365**949** 771**Fixed asset removal costs**

Fixed asset removal costs are the costs of removing certain fuel channels from nuclear reactors which are expected to be replaced during the life of the reactors, and the costs of decommissioning nuclear and fossil generating stations and heavy water production facilities after the end of their service lives. The significant assumptions used in estimating fixed asset removal costs were:

- removal of fuel channels in Pickering Nuclear Generating Station "A" units 3 and 4 in the 1989 to 1992 (1988 - 1997 to 2000) period, Bruce Nuclear Generating Station "A" units 1 and 2 in the 1996 to 2000 period and units 3 and 4 in the 2002 to 2010 (1988 - 2001 to 2011 for all 4 units) period, Pickering "B" in the 2012 to 2017 (1988 - 2012 to 2017) period and Bruce "B" in the 2014 to 2019 (1988 - 2014 to 2020) period;
- decommissioning of nuclear generating stations in the 2042 to 2065 period on the deferred dismantlement basis (dismantlement following storage with surveillance for a 30-year period after shutdown of the reactors), and a transportation distance of 1,000 kilometres from nuclear generating facilities to disposal facilities;

- dismantlement of Bruce Heavy Water Plants "A", "B" and "D" in the 1995 to 2005 period;
- interest rates through to 2065 ranging from 10% to 11% (1988 - 10% to 11%); and
- escalation rates through to 2065 ranging from 4% to 9% (1988 - 4% to 9%).

Because of possible changes to the above factors and the methods used for decommissioning and fuel channel removal, these costs are subject to revision.

**Irradiated fuel disposal costs**

The significant assumptions used in estimating the future irradiated fuel disposal costs were:

- an in-service date of the year 2010 for irradiated nuclear fuel disposal facilities;
- a transportation distance of 1,000 kilometres from nuclear generating facilities to disposal facilities;
- interest rates through to the disposal date ranging from 10% to 11% (1988 - 10% to 11%); and
- escalation rates through to the disposal date ranging from 4% to 9% (1988 - 4% to 9%).

Because of the uncertainties associated with the technology of disposal, and the above factors, these costs are subject to change.

**13. Statement of source of cash used for investment in fixed assets**

The Statement of Source of Cash Used for Investment in Fixed Assets reports the investment in fixed assets resulting from the cash flows from operations, financing and other activities, and the effects of changes in cash and cash equivalents and changes in accounts payable and accrued charges affecting investment in fixed assets during the year. This statement focuses on the investment in fixed assets in view of Ontario Hydro's current level of construction

activities which are financed from two major sources, cash provided from operations and cash provided from financing. Cash provided from financing represents the amount of cash provided from the issuance of long-term debt and the increase in the level of short-term notes payable issued for debt management purposes, less the amount of cash used to retire long-term debt.



### 13. Statement of source of cash used for investment in fixed assets (continued)

The components of cash provided from operations, cash provided from investment in other assets, and changes in cash and cash equivalents, defined to be

cash and temporary investments net of short-term notes payable issued for cash management purposes, are summarized below.

	1989	1988
	<i>millions of dollars</i>	
<b>Cash provided from operations:</b>		
Net Income	699	626
Items not requiring cash in the current year		
Depreciation	845	811
Amortization of foreign exchange gains and losses	(52)	(61)
Provision for irradiated fuel disposal costs	27	26
Nuclear agreement - payback	1	11
Other	177	120
Funds provided from operations	1,697	1,533
Changes in working capital, excluding cash and cash equivalents, and long-term accounts payable affecting operations - (increase) decrease	8	(165)
Cash provided from operations	1,705	1,368
<b>Cash used for investment in other assets:</b>		
Advances and related costs for fuel supplies	(3)	(2)
Less repayments and amortization of advances for fuel supplies	32	27
Other	29	25
Cash used for investment in other assets	(43)	(45)
<b>Changes in cash and cash equivalents:</b>		
Cash and temporary investments - (increase) decrease	668	(223)
Short-term notes payable issued for cash management purposes - (decrease)	—	(2)
Changes in cash and cash equivalents - (increase) decrease	668	(225)
The reconciliation of the change in fixed assets during the year with the investment in fixed assets for the year is summarized below:		
Change in fixed assets	2,387	1,989
Depreciation of fixed assets in service	792	774
Less depreciation charged to heavy water production and construction in progress	(104)	(95)
	688	679
Net book value of fixed assets sold or retired	20	21
Investment in fixed assets	3,095	2,689

### 14. Pension, insurance and health care

Ontario Hydro's employee benefit programs include the pension plan, the group life insurance plan and the long-term disability plan. The assets of these plans and the changes in assets during the year are shown in the financial statements of The Pension and Insurance Fund and are not included in Ontario Hydro's financial statements.

#### Pension Plan

On October 21, 1986, the Ontario Hydro Employees' Union, Local 1000 of the Canadian Union of Public

Employees - C.L.C. (OHEU) filed an application for judicial review in the Supreme Court of Ontario to determine whether Ontario Hydro was entitled to apply the pension surplus that had accumulated in Ontario Hydro's Pension Plan to meet the Corporation's contribution obligation with respect to 1986. On May 3, 1989, the Court of Appeal of the Supreme Court of Ontario rendered its decision that Ontario Hydro was not entitled to apply the pension surplus that had accumulated in the Pension Plan to meet the Corporation's contribution with respect to

#### 14. Pension, insurance and health care (continued)

1986, being about \$74 million, and ordered Ontario Hydro to contribute such amount to the Pension Plan. In compliance with the Court of Appeal decision, Ontario Hydro paid \$71 million into the Pension Plan in January 1990. This amount is comprised of the amount awarded by the Court of Appeal and post-judgement interest, less a prepaid contribution. The amount of \$71 million was charged against the accrued pension liability account in Ontario Hydro's Statement of Financial Position.

On December 22, 1989, the OHEU filed an application for judicial review in the Supreme Court of Ontario to require Ontario Hydro to comply with its statutory obligation to contribute the difference between the amount of the contributions of the employees and the amount of the cost of the pension benefits as determined by actuarial valuations for the years 1983, 1984, 1985, 1987, 1988 and 1989, plus pre-judgement interest. Ontario Hydro has filed a notice of appearance in response to the application. No amount has been accrued in the 1989 financial statements to provide for the contingency with respect to these years as, at this time, the results of the judicial review are not determinable. Any amount that Ontario Hydro is required to contribute to the Pension Plan with respect to these years will be charged to the accrued pension account in the statement of financial position. In the event that the accrued pension amount does not have future benefit to Ontario Hydro as determined in accordance with the recommendations of the Canadian Institute of Chartered Accountants, it is expected that management would request the Board of Directors specify such loss in value be deferred and amortized to future operations on a basis consistent with its inclusion in electricity rates.

The pension costs for 1989 were \$65 million (1988 – \$40 million). In 1989, about \$49 million (1988 – \$30 million) of the pension costs were charged to operations and \$16 million (1988 – \$10 million) were capitalized.

The pension costs for 1989 were actuarially determined for accounting purposes using the following significant assumptions which take into consideration the long-term nature of the pension plan:

- rate used to discount future pension benefits – 8.50% (1988 – 8.50%);
- rate used to estimate interest cost and return on investments – 8.50% (1988 – 8.50%);
- salary escalation rate – 7.00% (1988 – 7.00%);
- rate used to estimate ad hoc improvements in pension benefits to partially offset the effect of increase in cost of living – 2.50% (1988 – 2.50%);
- average retirement age for males – 59.1 (1988 – 59.1) and for females – 60.2 (1988 – 60.2); and
- average remaining period of service of the employees – 17 years (1988 – 17 years).

Based on these assumptions, the actuarial present value of the accrued pension benefits is estimated to be \$3,524 million as at December 31, 1989 (1988 – \$3,182 million), and the pension plan assets available for these benefits were \$3,882 million (1988 – \$3,451 million).

##### Group Life Insurance Plan

The group life insurance plan had assets of \$21 million as at December 31, 1989 (December 31, 1988 – \$25 million). Effective April 1, 1986, the assets are being used to pay both the employee and employer insurance premiums for all members of the plan until such time as the assets are fully utilized.

##### Group Health Care Plan

Ontario Hydro provides a group health care plan to its employees. In 1989, the cost of providing these benefits was \$53 million (1988 – \$52 million).

##### Post Employment Benefits

In addition to pension benefits, Ontario Hydro provides group life insurance and health care benefits to its retired employees and, in certain cases, their surviving spouses and unmarried dependents. The cost of providing the group life insurance and health care benefits is charged to operations as incurred. In 1989, the cost of providing these benefits was \$12 million (1988 – \$11 million).

#### 15. Research and development

In 1989 approximately \$112 million of research and development costs were charged to operations and \$10 million were capitalized (1988 – \$88 million and \$22 million, respectively).

#### 16. Comparative figures

Certain of the 1988 comparative figures in the Statement of Operations have been reclassified to conform with the 1989 financial statement presentation.

## FIVE-YEAR SUMMARY OF FINANCIAL AND OPERATING STATISTICS

	1989	1988	1987	1986	1985
<i>millions of dollars</i>					
<b>Revenues</b>					
Primary power and energy					
Municipal utilities	4,209	3,824	3,441	3,116	2,891
Rural retail customers	1,256	1,103	968	885	815
Direct industrial customers	790	730	675	604	568
	6,255	5,657	5,084	4,605	4,274
Secondary power and energy	91	156	196	248	351
	6,346	5,813	5,280	4,853	4,625
<b>Costs</b>					
Operation, maintenance and administration	1,534	1,354	1,150	1,014	966
Fuel and fuel-related	1,363	1,190	1,223	1,003	1,061
Provincial government levies	177	91	85	86	82
Depreciation	845	811	723	705	655
	3,919	3,446	3,181	2,808	2,764
<b>Income before financing charges</b>	2,427	2,367	2,099	2,045	1,861
<b>Financing charges</b>					
Gross interest	3,016	2,845	2,744	2,684	2,551
Capitalized interest	(1,175)	(1,012)	(978)	(1,038)	(1,166)
Investment income	(144)	(93)	(64)	(61)	(60)
Foreign exchange	31	1	126	213	176
	1,728	1,741	1,828	1,798	1,501
<b>Net income</b>	699	626	271	247	360
<i>millions of dollars</i>					
<b>Financial position</b>					
Total assets	36,277	34,358	32,657	31,357	29,320
Fixed assets	32,362	29,975	27,986	26,103	24,149
Long-term debt	25,141	24,240	23,862	23,494	22,518
Equity	6,287	5,588	4,962	4,691	4,444
<i>millions of dollars</i>					
<b>Cash flows</b>					
Cash provided from operations	1,705	1,368	1,204	1,040	1,055
Cash provided from financing	662	1,575	1,355	1,850	737
Cash used for investment in fixed assets	2,992	2,673	2,452	2,585	2,644
Investment in fixed assets	3,095	2,689	2,524	2,523	2,541
<b>Financial indicators</b>					
Debt ratio <sup>(1)</sup>	0.817	0.829	0.836	0.835	0.830
Cash flow coverage <sup>(2)</sup>	1.16	1.19	1.08	1.05	1.02
Interest coverage <sup>(3)</sup>	1.24	1.23	1.10	1.09	1.14
<i>millions of kilowatt hours</i>					
<b>Primary energy sales<sup>(4)</sup></b>					
By major customer category					
Municipal utilities	93,715	89,607	84,058	80,026	77,011
Rural retail customers	19,767	18,365	16,599	16,279	15,638
Direct industrial customers	20,491	20,096	19,561	18,458	18,011
	133,973	128,068	120,218	114,763	110,660
<b>Secondary energy sales<sup>(4)</sup></b>	2,292	5,019	6,515	6,046	8,565
<b>Energy and Demand</b>					
Installed dependable peak capacity (megawatts) <sup>(5)</sup>	30,271	30,333	30,080	30,701	28,224
December primary peak demand (megawatts)	23,630	23,012	20,524	20,609	20,473
Primary energy made available (millions of kilowatt-hours) <sup>(6)</sup>	140,770	134,395	126,455	120,574	116,049

	1989	1988	1987	1986	1985
<b>Number of primary customers<sup>(4)</sup></b>					
Municipal utilities	315	316	316	316	316
Rural retail customers	891,306	863,039	835,937	813,193	795,022
Direct industrial customers	112	110	108	106	103
<i>in cents per kilowatt-hour of total energy sales</i>					
<b>Average revenue<sup>(4)</sup></b>					
Primary power and energy					
Municipal utilities	4.491	4.268	4.094	3.894	3.754
Rural retail customers	6.801	6.361	6.248	5.901	5.720
Direct industrial customers	3.855	3.633	3.451	3.272	3.155
All primary customers combined	4.715	4.453	4.268	4.058	3.911
Secondary power and energy	3.970	3.108	3.008	4.102	4.098
All classifications combined	4.702	4.402	4.203	4.060	3.925
<i>expressed as a per cent</i>					
<b>Average rate increases</b>					
Municipal utilities	5.0	4.7	5.2	4.0	8.5
Rural retail customers	5.9	4.4	6.6	3.8	8.7
Direct industrial customers	6.0	5.2	5.6	4.3	8.8
All primary customers combined	5.3	4.7	5.5	4.0	8.6
<i>in cents per kilowatt-hour of energy generated</i>					
<b>Average cost<sup>(4), (7)</sup></b>					
<b>Hydraulic</b>					
Operation, maintenance and administration	.275	.270	.276	.213	.187
Water rentals	.287	.274	.285	.243	.233
Depreciation, debt guarantee fee and financing charges	.389	.386	.465	.413	.399
	.951	.930	1.026	.869	.819
<b>Nuclear</b>					
Operation, maintenance and administration	.739	.623	.508	.481	.479
Uranium	.458	.453	.481	.481	.426
Depreciation, debt guarantee fee and financing charges	2.241	2.078	2.193	2.073	1.889
	3.438	3.154	3.182	3.035	2.794
<b>Fossil</b>					
Operation, maintenance and administration	.600	.530	.488	.550	.437
Coal, gas and oil	2.217	2.258	2.600	2.746	2.609
Depreciation debt guarantee fee and financing charges	.931	.918	.933	1.367	.997
	3.748	3.706	4.021	4.663	4.043
<b>Average number of employees</b>					
Regular	25,147	24,543	24,066	23,373	23,001
Non-regular <sup>(8)</sup>	8,929	7,930	8,081	9,032	8,135

**Footnotes**

(1) Debt ratio represents debt (bonds and notes payable, short-term notes payable, other long-term debt, accrued fixed asset removal and irradiated fuel disposal costs and bank indebtedness less unamortized foreign exchange gains and losses) divided by debt plus equity.

(2) Cash flow coverage ratio represents funds provided from operations plus net interest, and interest charged to fuel for electric generation less interest on accrued provisions divided by interest on bonds, notes and other debt.

(3) Interest coverage represents net income plus interest on bonds, notes, and other debt divided by interest on bonds, notes and other debt.

(4) Figures for 1989 are preliminary.

(5) Installed dependable peak capacity represents the net output

power supplied by all generating units, and includes non-operating reserve facilities: 1989 - 2,109 megawatts; 1988 - 2,109 megawatts; 1987 - 2,667 megawatts; 1986 - 3,784 megawatts; and 1985 - 3,933 megawatts. Also included are net firm power purchase contracts.

(6) Primary energy made available represents primary energy sales plus transmission losses and energy used for heavy water production and generation projects.

(7) Average cost per kilowatt-hour represents the costs attributable to generation but excludes the costs related to transmission, distribution and corporate administrative activities. These figures reflect the historical accounting costs of operating facilities and the actual energy generated by these facilities during the year.

(8) The majority of non-regular staff are construction trades persons.

**FIVE-YEAR SUMMARY OF STATISTICS - CUSTOMERS SERVED BY ONTARIO HYDRO  
AND ASSOCIATED MUNICIPAL UTILITIES**

	1989	1988	1987	1986	1985
	<i>in thousands</i>				
<b>Total number of customers<sup>(1)</sup></b>					
Residential	<b>3,041</b>	2,958	2,868	2,781	2,712
Farm	<b>105</b>	106	106	106	107
Commercial and industrial	<b>404</b>	392	377	365	354
	<b>3,550</b>	3,456	3,351	3,252	3,173
	<i>in kilowatt-hours per customer</i>				
<b>Average annual use<sup>(1)</sup></b>					
Residential	<b>12,000</b>	11,588	11,019	10,909	10,618
Farm	<b>24,762</b>	24,795	23,547	23,004	22,618
Commercial and industrial	<b>228,000</b>	224,705	220,834	216,666	213,673
	<i>in cents per kilowatt-hour</i>				
<b>Average revenue<sup>(1)</sup></b>					
Residential	<b>6.44</b>	6.22	5.98	5.63	5.42
Farm	<b>7.05</b>	6.67	6.48	6.00	5.74
Commercial and industrial	<b>4.87</b>	4.62	4.40	4.20	4.03
All customers	<b>5.35</b>	5.10	4.87	4.63	4.44

**Footnote**

(1) Figures for 1989 are preliminary.



## DIRECTORS AND OFFICERS

### BOARD OF DIRECTORS

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Ontario Hydro  
Deputy Chairman, President  
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Scarborough  
Chairman, Scarborough  
Public Utilities Commission

F. Tom Cowan,  
Mount Brydges  
Farmer, Chimo Farms Ltd.,  
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Springs Group of Companies

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Service Employees  
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Timmins  
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Officer and President,  
Malette Inc.

Dr. O. John C. Runnalls,  
Toronto  
Professor Emeritus of Nuclear  
Engineering and Energy  
Studies,  
University of Toronto

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J.A.G. Bell  
F.T. Cowan  
J.S. Hinds  
J.E. Hood

#### Audit

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R.E. Cavanagh  
A.G. Hearn  
J.E. Hood

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O.J.C. Runnalls  
J.S. Hinds

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G. Malette

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R.C. Franklin

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#### Vice-Chairman

J.A. Gordon Bell

#### Senior Vice-Presidents

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Finance and Services

Sam G. Horton  
Human Resources

Arvo Niitenberg  
Operations

#### Vice-Presidents

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Production

Alan R. Holt  
Corporate Planning  
(Appointed Nov. 1/89)

Dane B. MacCarthy  
Energy Management

John G. Matthew  
Property Development

Lorne G. McConnell  
Corporate Planning  
(Retired Dec. 31/89)

William G. Morison  
Design and Construction

Edythe A. (Dee) Parkinson  
Supply and Services

Norm L. Simon  
Corporate Relations

Hal K. Wright  
Regions

#### General Counsel and Secretary

Larry E. Leonoff

#### Treasurer

Felix P. Chee

### REGIONAL DIRECTORS

#### Central Wholesale Region

C. Gord Sanford  
420 Dundas Street East,  
Willowdale M2M 3T7

#### Eastern Region

Don A. Watson  
(Retired Feb. 14/90)  
420 Dundas Street East,  
Belleville K8N 5C3

#### Georgian Bay Retail Region

F. Al Perttula  
93 Bell Farm Road,  
Barrie L4M 1H1

#### Northeastern Region

Guy .R. (Bud) Barrett  
590 Graham Drive,  
North Bay P1B 8L4

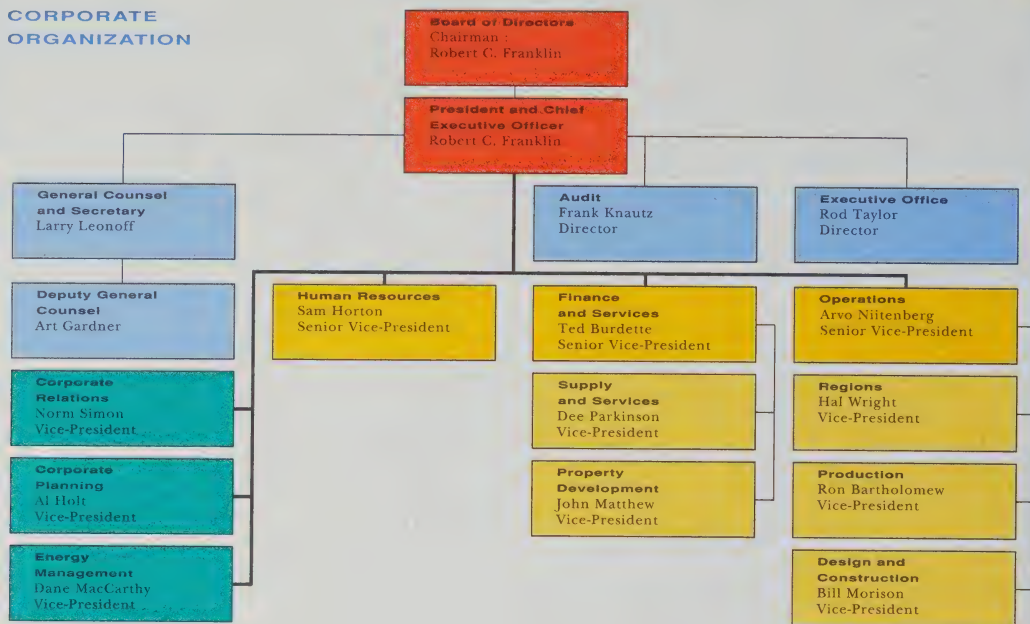
#### Northwestern Region

Larry V. Doran  
34 Cumberland Street, North,  
Thunder Bay P7A 4L5

#### Western Region

Dr. David A. Drinkwalter  
1075 Wellington Road,  
London N6E 1M1

# CORPORATE ORGANIZATION



## Corporate Planning Branch

Director of Corporate Programming  
Al Kupcis

Director of Environment  
Carole Burnham

Director of Research  
Don Mills

Chief Economist  
Economics and Forecasts  
Mitch Rothman

Director of System Planning  
Art Marriage

Director of Non-Utility Generation  
Paul Vyrotsko

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Manager, Corporate Communications  
Bob Cochrane

Manager, Community Studies and Public Hearings  
Chris Chorlton

Manager, Corporate Relations Strategic Planning  
Chris Chorlton (Acting)

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Ray Baril

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Hugh Irvine

Director of Design and Development – Transmission  
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Director of Construction and Services  
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John McCredie

Project Manager In-Service Nuclear Stations  
Brian Churchill

Project Manager In-Service Thermal Stations  
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Project Manager Hydraulic Projects  
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Treasury Division  
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Director of Thermal Generation  
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Director of Central Production Services  
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Ron Stewart

Director of Hydraulic Generation and Transmission Operations  
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Gord Sanford

Director of Eastern Region  
Don Watson  
(Retired Feb. 14/1990)

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Al Pertulla

Director of Northeastern Region  
Bud Barrett

Director of Northwestern Region  
Larry Doran

Director of Western Region  
David Drinkwalter

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Doug Smith

Director of Information Services  
Ken Moore

Director of Real Estate and Security  
Tom Reynolds

Director of Supply  
Ron Field

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# Ontario Hydro Annual Report 1990

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*Let's Give Tomorrow A Hand*



AT ONTARIO HYDRO, energy conservation is an essential part of our customer service.

We are committed to helping electricity customers across Ontario get more value for their energy dollar; lower their electricity bills; and contribute to environmental protection – all by using energy more efficiently.

We are equally committed to continuing to provide a reliable supply of electricity at a reasonable cost.

Our 1990 Annual Report features our efforts to help Hydro customers make saving energy a part of their lives – at home and at work.

Whether it's changing to a compact fluorescent light bulb or installing new energy-efficient equipment, all Ontarians have a role to play.

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To the Honourable Jenny Carter, Minister of Energy

On behalf of the Board of Directors, I am pleased to submit to you Ontario Hydro's report on the financial position of the corporation, with discussion and analysis of issues and initiatives for 1990 and beyond.

We thank you and your staff in the Ministry of Energy for the co-operation extended over the year.



Robert C. Franklin  
Chairman of the Board of Directors  
April, 1991

ONTARIO HYDRO was created in 1906 by a special statute of the Province of Ontario. We are a financially self-sustaining corporation without share capital. Bonds and notes issued by the corporation are guaranteed by the Province.

Ontario Hydro serves the people of the province by supplying reasonably-priced and reliable electricity. We also help meet our customers' broader energy needs by providing comprehensive information about energy conservation. Ontario Hydro is developing innovative programs to better manage energy consumption, and offering financial incentives for greater energy efficiency.

Under the Power Corporation Act, it is our responsibility to generate, supply and deliver electricity throughout Ontario as well as to provide energy conservation programs. We also produce and sell steam and hot water as primary products. We work with and regulate municipal utilities. In co-operation with the Canadian Standards Association, we are responsible for the inspection and approval of electrical equipment and wiring throughout Ontario. We sell electricity to 314 municipal utilities, which then sell this power to customers in their service area. We also directly serve more than 100 large industrial customers and 915,027 small business, residential, and farm customers in rural and remote areas. Our total number of customers, direct and indirect, is 3.6 million.

Ontario Hydro operates 81 hydro-electric, fossil-fuelled, and nuclear generating stations and an extensive transmission and distribution system across the province.

The Corporation is governed by a Board of Directors. The Board can have up to 17 members, 16 of whom are appointed by the Lieutenant-Governor-in-Council of Ontario. The President and Chief Executive Officer, also a Board member, is a full-time employee of Ontario Hydro and appointed by the Board. In 1990, the position of Chairman of the Board was also filled by the President and Chief Executive Officer.

There are six committees of the Board: Finance, Audit, Management Resources, Social Responsibility, Technical Advisory, and Pension and Insurance Fund Investment.

Our head office is located at 700 University Avenue, Toronto. We also have six regional and 46 area offices across Ontario serving our customers.

## FINANCIAL HIGHLIGHTS

	1990	1989
	<i>millions of dollars</i>	
<b>Revenues</b>	<b>6,484</b>	6,346
<b>Net Income</b>	<b>129</b>	699
<b>Total Assets</b>	<b>39,373</b>	36,277
<b>Investment in Fixed Assets</b>	<b>3,544</b>	3,095

ONTARIO HYDRO believes in energy conservation.

We believe that helping our customers save electricity is as much a part of our service as providing a reliable supply of electricity.

Quite simply, conserving electricity and using electricity more efficiently pays dividends to our customers in different ways.

Saving electricity reduces energy costs. It gives our customers greater control over their energy bills. Conservation also helps to protect the environment by reducing the need for new generating facilities.

To serve Ontario better, we want to do a better job of balancing the province's needs for electricity with its ability to use less. But we can't do it alone.

We need the help of people across Ontario. We need the participation of our customers – as partners – to use electricity more efficiently.

From the flick of a switch ... to the hum of an appliance ... we want people to be aware of the electricity they use in their homes. And we want to show them how using less power can still meet their needs.

In hospitals, schools, colleges and universities, stores, offices, and industries throughout Ontario, we're asking people to invest – along with us – in Ontario's energy future. We're developing new conservation programs with attractive financial incentives to meet specific customer needs. Creative and comprehensive ways of reducing energy use will help improve our housing, our workplaces, our communities, and our lifestyle.

Ontario Hydro has a plan of action: to save electricity; to ensure a reliable supply of electricity; to serve our customers.

We're asking Ontario to participate with us.



LIKE UTILITIES throughout the world, Ontario Hydro is a company in transition. A transition marked by changing customer needs, new social demands, and global economic pressures.

Two decades ago, customers wanted Hydro to deliver reliable and reasonably-priced power. Ontario Hydro was hard-pressed to build enough generating supply.

Today, we're searching for new and innovative ways to meet electricity demand, to deliver increased energy savings, invest in greater environmental protection, and more actively pursue private sector generation.

Of course, these areas are not entirely new for Ontario Hydro. They have always been a part of our service to customers. But shifting public priorities are commanding new and much expanded efforts. And we are working hard to meet our customers' evolving needs.

In this changing climate, our task is to anticipate, not just respond. To be customer-oriented, as well as results-driven. In 1990 alone, we invested more than \$100 million in our energy conservation and efficiency efforts. And results were achieved. Our customers saved about 200 megawatts of electricity through greater energy efficiency. That's equivalent to the power needs of Oshawa today.

By the end of the decade, Ontario Hydro will have spent at least \$3 billion to help achieve energy savings of 4500 megawatts – more than enough electricity to meet the current requirements of a city the size of Metropolitan Toronto.

Our drive to reduce Ontario's demand for electricity is powered both by necessity, and conservation's role in customer service.

We need energy savings now to help ensure there is enough electricity to meet Ontario's needs in the future. We also believe energy conservation will help serve our customers by reducing their energy costs and protecting the environment.

The challenge of achieving greater conservation is enormous. The urgency and the commitment required is real. We want every business and every citizen across Ontario to participate.

How urgent? How real?

If electricity demand grows between 2.5 and 3 per cent every year for the next 25 years, Ontario will be consuming double the amount of power it uses today. Customer demand rose by about 3 per cent per year over the last 10 years.

And right now, Ontario's electricity system is aging. More than one-quarter of Hydro's generating facilities are expected to be retired by the year 2014.



We are committed to meeting our ambitious conservation targets. We are confident they can be met, provided that all of Ontario participates, sharing our commitment and challenge.

But energy conservation is not the only challenge Ontario Hydro is facing. As our general 1990 performance indicates, we experienced some disappointments.

Of most concern, our worker safety record fell significantly, and is simply unacceptable. We are now implementing comprehensive plans to keep our employees safer.

Also of great concern was our failure to meet our financial targets due to higher costs, the effect of the recession, and operational setbacks, particularly at our nuclear plants.

Our performance targets for our nuclear generating units were not achieved due to unplanned outages, in-service delays and extended downtime for maintenance.

Over the next year, Ontario Hydro will be taking aggressive steps to improve our overall performance.

Quality improvement programs will strengthen plant performance, streamline maintenance tasks, and decrease outages. In other parts of the corporation, continuous improvement programs will result in greater effectiveness and enhanced customer service. New productivity gains and ways to cut costs are being pursued to reduce pressure on electricity prices.

The challenges of the new decade will demand innovation, flexibility, and a sense of partnership with all those we serve.

They will also demand partnership among employees, whose efforts I would like to acknowledge in a year of difficulty. And whose continuing commitment will be essential in the years ahead.

Ontario Hydro is seeking energy savings. We are seeking corporate improvements. We are seeking to better serve our customers with reliable and affordable electricity.



# Partnership

*Ontario Hydro and the municipal electric utilities are encouraging customers to become partners in conservation.*



FROM SHOWERS in our homes to heating and cooling in our schools, and from lighting in our offices to motors in industries – all of these can be made more energy efficient.

But it takes people to conserve energy: a lot of people, in every segment of the market.

From one end of this province to the other, it takes partnership among people. Investment from business. Support from government. Only through all our combined efforts, and by working together, will Ontario save enough electricity for a secure energy future.

There is a lot to do. Appliance standards and building codes can be improved. Energy efficiency regulations need to be clearly established and followed. Industry must see a payback sooner.

Ontario Hydro must – and will – do more. By offering a \$3 billion program of information, energy audits, hands-on assistance, and financial incentives, we're helping Ontario save energy. And we're developing new and innovative energy efficiency programs flexible enough to meet individual energy needs while ensuring the broadest participation.

In 1990, we reached out to Ontario in many ways. In classrooms and community halls, at trade shows and business forums, we promoted energy conservation and efficiency. We encouraged everyone to contribute – because the benefits are real.

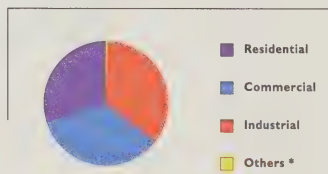
Energy efficient products and practices in homes will help control electricity use and energy bills.

Conserving electricity in business and industry will reduce energy costs and help Ontario achieve a competitive edge.

The power we save today will defer our need for new generating stations tomorrow, in turn lessening electricity's effect on the environment.

Across Ontario, we share electricity's values and benefits. As partners, we must also share the responsibility of greater energy efficiency.

Share by sector



\* Agriculture, transportation



How much is a megawatt ?



**A megawatt** is one way to measure customer electricity demand at a point in time. In an average Ontario city, 1 megawatt could serve the electricity needs of about 300 people. This chart shows approximately how much electricity (in megawatts) selected towns and cities of Ontario would use on a cold winter day.



**Working with** manufacturers, distributors, and retailers, Ontario Hydro is helping to expand the number of energy efficient products available to customers.

**A co-operative effort** between Mayor Melba Barker and Ontario Hydro's Dave Whyte helped the town of Carleton Place (near Ottawa) cut its electricity bill by more than half after installing energy-efficient streetlights.

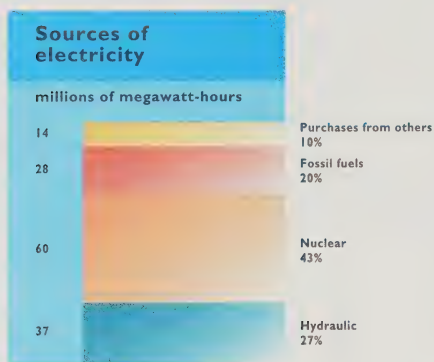


## HIGHLIGHTS OF 1990

### Recession Affects Demand

The 1990 slowdown in Ontario's manufacturing sector was reflected in the declining demand for electricity. For only the third time in our history, demand for power fell.

Ontario Hydro supplied a total of 136.7 million megawatt-hours in 1990, 2.9 per cent less than the 1989 electricity supply of 140.8 million megawatt-hours. The 1990 daily 20-minute peak demand of 22,311 megawatts, which occurred on February 26, was about 6 per cent lower than the December, 1989 all-time high peak demand of 23,630 megawatts.



**Customers' electricity needs were met through a diverse range of energy sources in 1990.**

### Striving to Meet Customers' Needs

Ontario Hydro generates electricity using three main sources: uranium for nuclear power; coal and oil for fossil-fuelled generation; and falling water and rivers for hydraulic power.

In 1990, Hydro's nuclear stations did not meet performance expectations due to unplanned outages, in-service delays, and extended downtime for maintenance. Nonetheless, nuclear power still supplied 43.5 per cent of Ontario's electricity demand or 59.5 million megawatt-hours. Fossil-fuelled generation supplied 20.1 per cent of demand, or 27.5 million megawatt-hours, while hydraulic power supplied 26.8 per cent of Ontario's needs, or 36.6 million megawatt-hours.

Ontario Hydro also purchased power from other utilities outside the province to help meet Ontario's electricity needs and reduce its acid gas emissions.

Due to nuclear capacity shortfalls and tighter acid gas control regulations, purchases were at a record high during 1990, while sales of surplus power were nominal.

For the second year in a row, Ontario Hydro was a net importer of energy, buying 13.8 million megawatt-hours of electricity, primarily from U.S. utilities, and selling 600,000 megawatt-hours. The gross cost to Ontario Hydro customers was \$477 million. Included in these purchases were 366,000 megawatt-hours of non-utility generation from private power sources in Ontario.

### Health and Safety

Ontario Hydro's safety performance fell considerably in 1990, relative to its past performance and that of other utilities.

President and Chief Executive Officer Robert Franklin characterized the six on-the-job fatalities in 1990 as "simply unacceptable." These tragedies, coupled with worsening trends in the frequency and severity of occupational accidents, highlighted the need to implement fundamental changes in Hydro's approach to worker safety.

In response, all branches in 1990 resolved to eliminate the root causes of accidents and to support the company's new goal: "To Have Healthy Employees, Working Safely in an Accident-Free Workplace." To create a "safety partnership" with employees, joint labour-management health and safety committees were encouraged to go beyond their legal mandate to achieve a safe working environment.

A major aspect of this expanded role has been to provide all certified committee members with the authority to shut down any unsafe work operations throughout Ontario Hydro.

Also in 1990, Hydro developed a more extensive rehabilitation and re-employment policy improving the services to ill or injured employees returning to the workplace.

### Customer Service

As part of its commitment to improve service to customers and encourage greater awareness and control of energy use, Hydro developed specifications for new three-phase, time-of-use meters in 1990.

These meters will be less expensive than those now used to monitor time-of-use rates for large customers and municipal utilities. Improved features of the new meter offer customers increased opportunity to manage their electricity bills. Work is also proceeding to develop specifications for a single-phase, time-of-use meter for Hydro's 900,000 small and mid-size customers.

Hydro also centralized its customer bill payments process, freeing local staff to provide better service. In addition, the Corporation decentralized its Customer Energy Service function to provide a stronger community presence for promoting energy conservation and efficiency.

### Hydro Price Increase

In October, Hydro's Board of Directors approved an average electricity price increase of 8.6 per cent for 1991. The increase, which is higher than in recent years, was the result of strong cost pressures due to bringing new facilities into service, increased spending on environmental protection, up-front costs of conservation programs, and additional pension funding.



**More than 70 communities** in Ontario provided feedback to our proposed 25-year plan for meeting future energy needs. Called "Providing the Balance of Power", the plan recommends a balanced mix of energy options.

### Continuous Improvement

Ontario Hydro launched continuous quality improvement initiatives in several areas of the corporation. The initiatives are designed to involve management, employees and their representatives in improving customer service and operating performance through greater work and team effectiveness.

### Demand/Supply Plan

In late 1989, Ontario Hydro released its 25-year plan for meeting the province's future power needs.

Called "Providing The Balance Of Power", the plan proposes a mix of energy options: conservation; non-utility generation; new hydraulic, gas-fired, and nuclear supply; purchases from out of province; and rehabilitation of existing generating stations.

Following the release of the plan, Hydro launched an extensive public feedback program in January 1990, in preparation for the Ontario government's Environmental Assessment Board hearings, now scheduled to begin in April, 1991. The goal of the program was to inform the public of the proposed plan's key components, obtain comments, and report these back to senior management.



**Helping customers at home and in the workplace to better manage their electricity use is a part of Ontario Hydro's service.**



# In the Home...

*In 1990, Ontario Hydro launched several successful residential conservation programs.*



INDIVIDUALLY, energy savings in the home may seem relatively small. Yet collectively

— switching to energy efficient bulbs, using a cold water laundry rinse, or insulating an electric water heater — all bring important gains.

Important — because each kilowatt saved demonstrates that Ontarians are changing the way they think about electricity.

In spring, Hydro cash rebates encouraged consumers to purchase 130,000 energy efficient shower heads, resulting in savings of 3.4 megawatts. In September, Hydro and Canadian Tire launched a joint promotion of 30 energy-efficient products featuring discounts of 10 to 40 per cent. Sales exceeded 450,000 items for savings of more than 4 megawatts.

Last fall, Hydro offered a rebate for energy-efficient, compact fluorescent light bulbs, distributed by Loblaws. At the end of 1990, about 120,000 of the energy efficient light bulbs — about four times more than expected — had been sold, for total electricity savings of 1.7 megawatts.

Ontario's municipal electric utilities also played a key role in

the 1990 residential conservation market.

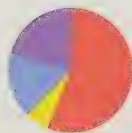
Together, Ontario Hydro and a number of utilities offered free water heater tune-ups to 25,000 customers. The tune-ups saved about 1.5 megawatts.

Another Hydro program, launched in May, 1990, offered rebates of up to \$2,000 for heat pumps in areas not served by natural gas. By year end, more than 3,000 units had been installed, saving about 10 megawatts.

The agricultural sector is also a key conservation target. In 1990, Ontario Hydro hosted a dozen energy efficient farm workshops, in addition to participating in several farm trade shows.

By year end, Hydro incentives for agricultural lighting or heat lamp conversions had resulted in energy savings of 3 megawatts.

Residential end-use shares



- Space heating
- Water heating
- Space cooling
- Appliances



**Cash rebates from Hydro helped introduce homeowners to energy-saving products such as shower-heads and fluorescent bulbs.**



**Mrs. Ngan Ping Tsui**  
received a home energy audit  
from North York Hydro, pin-  
pointing the many ways she can  
save energy in her home.



**By installing timers on lights  
and appliances, customers can  
increase their control over electricity  
use in their homes.**

Activities included Hydro information centres in more than 70 Ontario communities, with over 10,000 people visiting the centres; 1,400 presentations of the plan and distribution of material to interest groups, politicians, government agencies, the media, service clubs, community groups and business associations; and mass communications through two 1-800 lines, newspapers, radio and TV ads, displays, and billing inserts.

Bilingual information centres and French translation of the Demand/Supply documents were provided. The preparation of videos and written summaries in Cree, Ojibway and Oji-Cree by Aboriginal communities jointly with Ontario Hydro also began in 1990. Ontario Hydro is responsible for funding, writing and producing these materials.

Pre-engineering studies related to new nuclear capacity proposed in the Demand/Supply Plan were cancelled in November. In its Throne Speech, the Ontario government placed a moratorium on work towards new nuclear power stations in the province, although completion of the Darlington nuclear generating station was approved. The \$240 million Hydro had earmarked for pre-engineering studies was redirected into new conservation initiatives.

The government affirmed that all electricity options, including nuclear, would be reviewed in the Demand/Supply Plan hearings before the Environmental Assessment Board.

In 1990, the Environmental Assessment Board awarded intervenor funding to 33 groups participating in the Demand/Supply Plan public hearings. Ontario Hydro will provide up to \$23.2 million to intervenors to participate. About 200 intervenors are scheduled to appear.

### Environmental Initiatives

Ontario Hydro expanded its commitment to environmental protection in 1990 with several new initiatives.

In May, Hydro signed a five-year reforestation agreement with the Ministry of Natural Resources. This agreement, initiated by Hydro, calls for the Corporation to fund seedling tree plantings equivalent to areas cut for new Hydro rights-of-way in northern Ontario. A similar program has been in place for many years in southern Ontario; in 1990, approximately 200,000 trees were planted by Ontario Hydro.

In late 1990, Hydro expanded its fine paper recycling program to include newspapers, glass bottles and beverage cans. Virtually all of Hydro's office employees participate in the corporate paper recycling program, recovering 2,000 tonnes of fine paper a year. At construction sites, Hydro also has recycling programs in place, involving scrap metal, wood, and corrugated cardboard.



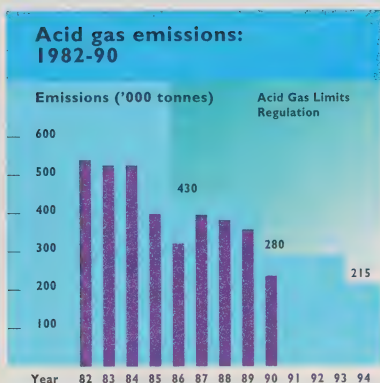
**Zebra mussels** are becoming a problem for Ontario Hydro at our Great Lakes and St. Lawrence River generating stations. Research to find ways of controlling the molluscs intensified in 1990.

Hydro also took steps in 1990 to stop zebra mussels – small, rapidly reproducing molluscs – from clogging the service water piping of generating stations. New chlorination systems for treating service water were installed at hydraulic stations on the Niagara and St. Lawrence Rivers, and at all fossil-fired and nuclear power plants. Hydro is also engaged in extensive research on other methods to mitigate the zebra mussel threat.

Detailed engineering and excavation work was undertaken at Nanticoke generating station to convert the current wet fly ash disposal site to a dry storage system. The new system will provide greater environmental control of fly ash.

Work continued on two separate five-year environmental targets: one, to





**1990 acid gas emissions** were less than half of 1982 emissions, and were well within the Ontario government regulation.

reduce herbicide use by 35 per cent from Hydro's 1988 level; and the second, to decontaminate all accessible oil tainted with polychlorinated biphenyls (PCBs) in both storage and operating equipment. Pole-mounted transformers and other small equipment are being decontaminated over a 15-year period.

In 1990, the removal of all PCB-filled equipment in hydraulic facilities was completed. Oil containment equipment was also installed at several hydraulic stations as a precaution against oil spillage from transformers into waterways.

An environmental audit program was developed and initiated in 1990 for Ontario Hydro's 75 area and district offices. The audit program will ensure compliance with all government legislation, as well as corporate standards, and ensure that management systems now in place are effective.

A new department of Environmental Sciences was formed within Research Division to ensure environmental knowledge and technology needed by the Corporation is fully researched and developed.

In compliance with the Municipal/Industrial Strategy for Abatement (MISA) program, Hydro installed new effluent monitoring equipment at 22 of its generating stations.

In 1990, the Ontario government control regulation on acid gas tightened to an annual level of 280,000 tonnes from the previous level of 430,000 tonnes. Ontario Hydro significantly reduced acid gas emissions in 1990 to 245,000 tonnes from the 1989 level of 368,000 tonnes, both amounts falling below the government regulation.

To upgrade Hydro's acid gas emission measurement systems, Ontario Hydro received approval for new flue gas monitors at Lakeview, Nanticoke, and Lambton generating stations.

During 1990, Ontario Hydro participated in several national and provincial consultation workshops related to government initiatives on air pollution management and global warming.

Hydro also awarded several corporate donations in 1990 to environmental projects. Chief among them were contributions to the World Wildlife Fund for toxicology studies; the Harmony Foundation for its Centre For Environmental Learning; and Vision 2020, an environmental education program for high school students.

### New Business Ventures

In 1990, Ontario Hydro's New Business Ventures Division reported revenues of \$46.1 million, and net income of \$4.8 million.

Major contract extensions were received for projects in Kenya, Egypt, and Hungary, while six Ontario Hydro-developed technologies were licenced to Canadian and U.S.-based manufacturers. In addition, a major joint venture initiative was established with Westinghouse to provide decontamination services to U.S. "light water" nuclear reactors.

New Business Ventures co-ordinated utility management training for 110 foreign trainees in 1990, and helped to attract a fourth customer for the Bruce Energy Centre, located adjacent to the Bruce Nuclear Power Development near Port Elgin.



**Hydro employees** provided expertise, technical assistance, and training for energy projects to countries around the world in 1990.

# In Business...

*Ontario Hydro information and incentives are helping business to invest wisely in energy efficiency.*



FROM OFFICE towers, retail malls, restaurants and schools, to hospitals and courthouses, the diverse commercial market has immense potential for electricity savings.

Throughout 1990, business people learned more about conservation by participating in Hydro's Product Knowledge Days. These seminars focused on energy efficient developments in thermal cool storage, lighting and power quality.

Also in 1990, Hydro carried out more than 1,300 commercial and industrial Power Saver audits, identifying 79 megawatts of potential energy savings.

Provincial and federal governments are also participating in energy efficiency efforts. In December 1990, the Ontario Ministers of Energy and Government Services announced their commitment to audit provincial government buildings. A potential savings of more than 70 megawatts could be achieved each year over the next five years.

The federal government, encouraged by the results of a successful Hydro pilot program in the Ottawa area, has expanded its energy audits to include 1,300

buildings in 1991, with more to follow.

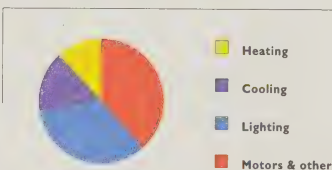
Another Hydro program, "Savings by Design", promotes energy efficient innovation in new commercial construction and retrofit projects. It yielded 3.5 megawatts of savings in 1990.

Over 900 business customers also changed their lighting systems – assisted by \$2.5 million in Hydro incentives. At year end, another 800 business customers were in the process of converting, for total electricity savings of 34 megawatts.

The success of an earlier street-lighting conversion pilot program, co-funded by the Ontario government and endorsed by the municipal utilities, spurred Hydro to launch the program province-wide in 1990.

Over the next four years, Hydro will provide \$30 million in street lighting incentives for expected energy savings of 43 megawatts.

Commercial\* end-use shares



\* Apartments & Condominiums included.



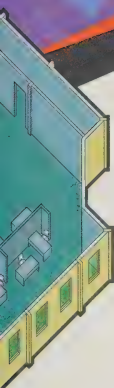
■ Programmable thermostats

■ Multifunction computer-based systems

■ Lighting controls



**Designing buildings to use less electricity is an investment that pays in reduced energy costs.**



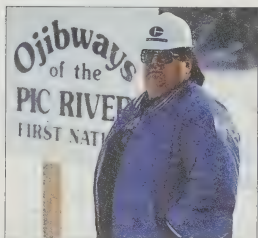
**The business sector** represents a large opportunity for energy savings. Hydro information about the latest conservation technology can help business track energy waste and implement energy efficient solutions.



**Bill Stephenson** of the Frontenac County Board of Education implemented energy management systems at 54 schools in 1990. Electricity use dropped by 12 per cent. Ontario Hydro is working with the Board to further improve energy efficiency.

### Aboriginal Relations

As part of its efforts to reach out to Aboriginal communities, Hydro developed Aboriginal Relations Guidelines in 1990. These guidelines commit Hydro to recognize the distinct legal, historical and cultural status of Aboriginal people.



*To better understand and accommodate concerns, Hydro is increasing consultation with Aboriginal communities.*

Hydro's Corporate Aboriginal Relations Steering Committee, composed of four vice-presidents, met with First Nations and Aboriginal political organizations in Blind River, Fort Frances, and Toronto during 1990. The Corporation also initiated orientation sessions on Aboriginal issues for Hydro staff.

Ontario Hydro provided opportunities for Aboriginal communities affected by Hydro generation and transmission proposals to become more directly involved. Hydro approached Aboriginal consulting firms in 1990 to provide the Aboriginal socio-economic component of the Environmental Assessments for a number of these proposals.

### Remote Communities

Construction proceeded in 1990 on distribution and generation facilities to supply electricity to the remote northern communities of Kingfisher Lake and Wapekeka. A key component of the electrification project involves supplying surplus heat from diesel units to the school and gymnasium in those communities.

### In-House Conservation

In keeping with its commitment to conservation, Hydro retrofitted several of its facilities in 1990 for greater energy efficiency. The projects included design changes to cut space heating and cooling costs, lighting conversions, reduction of hot water use, and increased efficiency of heating systems.

Guidelines have also been developed for both Hydro employees and the public to conserve energy used by computers, fax machines, photocopiers, and other office equipment.

## OPERATIONAL REVIEW

### Nuclear Generation

All eight units at Pickering nuclear generating station were shut down in May for a planned inspection of the vacuum containment building, which was found to be in satisfactory condition. The shutdown resulted in removing more than 4300 megawatts of power generation from the Hydro system. This outage was planned for a time when reduced demand and the availability of other generation ensured that no customer experienced a power interruption.

Work continued on the \$485 million Large Scale Fuel Channel Replacement program at Pickering. Installation of new pressure tubes on Unit 3 was completed in December, with the unit expected to be back in service in the summer of 1991, at which time work will begin on Pickering Unit 4.

The first of four units at Darlington nuclear generating station – Unit 2 – was declared in-service on October 9, adding over 850 megawatts of electricity production to the Ontario Hydro system. Unit 1 produced first electricity on December 19, and will be placed in commercial service in spring, 1991.

### Thermal Generation

Major rehabilitation programs are underway at Lakeview and Lambton thermal generating stations to extend their service lives.

At Lakeview, work began in February on Units 5 and 6, with rehabilitation of Units 1 and 2 planned to start in 1991. At the same time, flue gas conditioning equipment will be installed on the rehabilitated units to reduce acid gas emissions; fly-ash collection will also be improved.

At Lambton, rehabilitation will allow all four units to continue to supply power until the year 2010. The work is expected to be completed in 1995. In October, a contract was awarded for flue gas desulphurization units (scrubbers) for Units 3 and 4 at the station.

To facilitate the burning of low sulphur coal, which results in lower acid gas emissions, flue gas conditioning equipment was installed in 1990 at both Lambton and Nanticoke thermal generating stations. The need for a second pair of scrubbers for Lambton, and a first pair of scrubbers for Nanticoke, was also evaluated.

In addition, studies were initiated on the possible conversion of the Lennox oil-fired generating station so that it could also run on natural gas, to decrease acid gas emissions and provide operating flexibility.

### Hydraulic Generation

Progress was made on several hydraulic work programs to maintain and upgrade Hydro's water-powered generating stations for optimum output and reliability. In addition, a multi-year dam assessment and reconstruction program is underway to ensure the safe operation of older stations.

Site feasibility studies continued on the extension of Otter Rapids and Abitibi Canyon generating stations, as well as the proposed development of new stations at the Nine Mile and Blacksmith Rapids sites on the Abitibi River. The development of these sites could result in an additional 1072 megawatts of hydraulic generation. An Environmental Assessment for the Mattagami River extension project (involving about 400 megawatts of new generation) was submitted to the Ontario government in November.

The first phase of engineering definition work, involving further development of the Niagara River for an output of 921 megawatts, was completed in 1990. In December, the Ontario government approved Hydro's Environmental Assessment for the 10 megawatt redevelopment of the Big Chute Generating Station on the Severn River.

Ontario Hydro's plans for the development of the 132 megawatt Little Jackfish site in northern Ontario featured a unique participant funding pilot project. The President of Lakehead University in Thunder Bay was asked to distribute Hydro funds to enable local groups to: review the environmental assessment submitted to the Ministry of the Environment; study the Ontario government review of the environmental assessment; and provide comments to the government.

### Non-Utility Generation

Historically, Hydro has had about 1200 megawatts of non-utility generation either directly or indirectly connected to its electricity system.

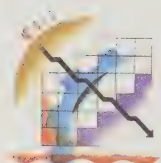


**Water power** has been an essential, renewable resource for Ontario's electricity customers since the development of the Niagara River in the early decades of the century.



# In Industry...

*Energy efficiency and conservation play a role in keeping Ontario industry competitive.*



BY REDUCING energy waste, industry can contribute to a

secure and reasonably priced supply of electricity in the future. An investment in energy efficiency will deliver reduced energy costs – without sacrificing reliability.

Focusing on energy security and savings, Hydro worked closely with industry in 1990. To encourage industries to invest in high efficiency motors, Ontario Hydro offered a program of financial incentives.

Since this program was launched in late 1989, high efficiency motors totalling more than 100,000 horsepower have been purchased by Ontario industries. In total, 3 megawatts of electricity savings have been achieved.

To shorten the payback period required to recoup an initial investment in new energy efficient technology, Hydro introduced an accelerated payback program. It offers financial incentives or loans for the purchase of approved energy efficient equipment for manufacturing plants.

Ontario Hydro also provided funding in 1990 for energy consultants to undertake industrial audits specific to certain manufacturing

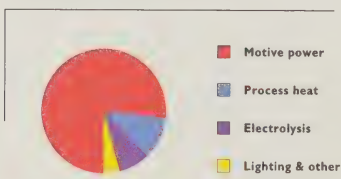
operations. At year's end, 100 consultant studies were underway, with 60 megawatts of energy reduction opportunities identified.

In 1990, 12 projects – involving such technologies as adjustable speed drives, winter free-cooling systems, and water pumping and sewage treatment upgrades – were completed for 1.5 megawatts of savings. Another 70 projects were initiated representing 8 megawatts of savings.

Since an industrial lighting program was launched in late 1989, 120 industries have completed conversion projects, assisted by \$1.2 million in Hydro incentives.

Another major area yielding energy savings for industry is time-of-use pricing, which offers lower electricity rates for off-peak power use. In 1990, more than 250 large customers and 160 municipal utilities, representing 80 per cent of Ontario's total demand for electricity, were billed under time-of-use pricing.

Industrial end-use shares

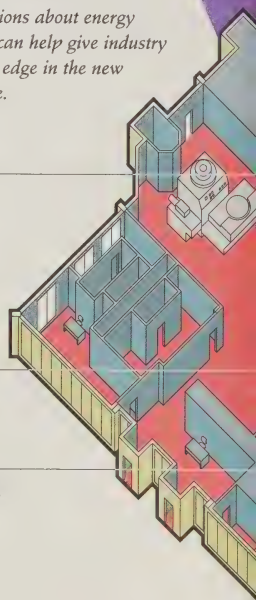


**Hydro's information and recommendations about energy conservation can help give industry a competitive edge in the new global climate.**

■ Adjustable speed drive

■ Thermal cool storage

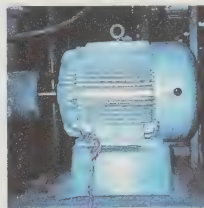
■ Programmable logic controller





**Industries converting to more energy-efficient lighting systems can take advantage of Hydro's financial incentives.**

**High-efficiency motors offer industry the potential for large energy savings.**



**John LeMay** of Inco in Sudbury took advantage of adjustable speed drives on motors, improved process efficiencies, and shifting demand to off-peak periods to improve efficiency of operations. Inco also plans to convert to energy-efficient lighting, with financial incentives from Hydro. The three-year project will save an estimated 3 megawatts of electricity.



At the end of 1990, following two years of operation of Hydro's new Non-Utility Generation Division, an additional 296 megawatts of electricity was being supplied to Hydro's system or serving private producers' own needs.



**Encouraging private power generation, such as this 4 megawatt hydraulic project under construction at Cameron Falls in northeastern Ontario, is part of Hydro's plan to meet Ontario's energy needs.**

This total of almost 1500 megawatts of non-utility generation represents five per cent of Hydro's total capacity. As well, private power developers have committed to a further 316 megawatts of non-utility generation.

Ontario Hydro expects there will be more than 3300 megawatts of non-utility generation in place by the year 2000.

In 1990, following a Request for Proposals, Hydro selected 14 projects for negotiation, representing almost 2000 megawatts of capacity. This amount of non-utility generation is in addition to 27 projects, representing 1700 megawatts, which were already under negotiation prior to the solicitation process.

Much of Ontario's future non-utility generation is expected to come from cogeneration, an energy-efficient process which produces both electricity and heat, generally in the form of steam, from the same fuel source.

### Transmission

Engineering and environmental studies work was launched in 1990 to prepare for Environmental Assessments for major transmission additions. Such projects included the northern Ontario transmission expansion plan, which would incorporate 1000 megawatts of power from Manitoba by the year 2000, and other transmission expansion plans between northern Ontario and Toronto, and eastern Ontario and southwestern Ontario.

Hydro also approved a plan to convert the aging and unreliable 25-Hertz (cycles per second) system in northeastern Ontario to 60 Hertz. Financial incentives will be provided to assist customers with the conversion of their load, and improve the efficiency of their equipment and processes.

Work on the southwestern Ontario Bulk Transmission Program reached a major milestone in 1990. The Longwood transformer station, near London, was energized from the new 500 kilovolt, double-circuit transmission line from the Bruce Nuclear Power Development. These new facilities, together with a new single circuit 500 kilovolt line from Longwood to the Nanticoke generating station, are scheduled for service in 1991. They will permit full delivery of the existing generation at the Bruce stations to serve Ontario electricity customers.

Capital funds were also released to upgrade existing transformer stations and transmission lines, and build new lines and stations to meet growing customer demand in key areas of the province. In addition, a program was approved to refurbish up to 400 kilometres of aging bulk transmission lines a year. This program will cost \$800 million over the next 10 years.

### Electric and Magnetic Fields

Ontario Hydro has initiated a comprehensive program to investigate possible health effects of electric and magnetic fields (EMF). During 1990, substantial progress was made in determining the EMF exposures of Ontario Hydro employees in the electrical trades. This information will be used in a joint occupational epidemiology study with Hydro-Québec and Electricité de France. Also, the methods for a complementary pediatric health study were

tested and finalized. Both of these studies are the most advanced of their type and are awaited nationally and internationally as important contributions to the understanding of EMF health effects.

### Clarkson System Control Centre

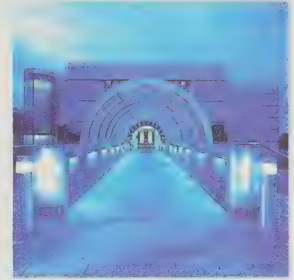
To provide continued and improved reliability and operating efficiency, a new state-of-the-art control centre, located in Clarkson, west of Toronto, was placed in operation on December 14. The old Richview control centre, located near Toronto International Airport, will be used as a back-up, and for other monitoring and control purposes.

### Research Division

In 1990, Ontario Hydro's Research Division invented, developed, and tested a new type of fall protection device, primarily for Hydro equipment maintenance staff. No similar device is on the market, and some fall protection equipment manufacturers have requested distribution rights. Funding for the work was provided by Ontario Hydro and the Construction Safety Association of Ontario.

Other successful research projects carried out in 1990 included various conservation projects which will help save electricity in the areas of space and water heating, and industrial drying and cooling processes. As well, researchers identified those atmospheric conditions which cause transmission insulators to malfunction and they designed an alternative insulator. Finally, an advanced, computer-based monitoring system for primary heat transport pumps was developed for Darlington nuclear generating station.

Ontario Hydro is involved in a significant number of other joint research and development projects with universities, business and industry throughout the province.



**State-of-the-art** technology helps Hydro to better manage Ontario's complex and extensive electricity system at the new system control centre in Clarkson.

## EMPLOYEES

### Employee Relations

In March 1990, the Ontario Hydro Employees' Union voted 95.8 per cent in support of a strike, which was later averted with the assistance of the Ontario Ministry of Labour. The settlement involved improvements to pension benefits and wages, and a reduction in hours of work.

As well, Ontario Hydro negotiated a new agreement with the Society, a representative body for Hydro's professional and managerial staff.

### Employment Equity

In 1990, Ontario Hydro set corporate targets to achieve, by the year 2000, a work force which reflects the external community. Designated employment equity groups include women, visible minorities, Aboriginal people, and persons with disabilities. To guide managers in their responsibilities for employment equity, a corporate policy was developed and approved.



**Daycare centres** for the children of Hydro employees help staff balance family responsibilities with career demands.

Also developed and approved in 1990 was a new internal Human Rights redress procedure. This procedure helps staff investigate complaints and recommend appropriate actions on behalf of employees who feel they have been discriminated against.

As part of its initiative to help employees balance their career and family responsibilities, Ontario Hydro made a commitment in 1990 to provide start-up funds for a Pickering-area daycare centre, in partnership with Durham College and the Ontario government. This brings to three the number of daycare centres Hydro has helped establish for employees.

In keeping with its outreach program to attract women to non-traditional careers, such as engineering, the Employment Equity Department made several presentations about sexism to engineering schools in 1990. The Senior Vice-President of Human Resources also took a strong stand against sexism and racism; in a letter-campaign to all Canadian universities, he indicated that future engineers would not be employed at Hydro unless they were prepared to work with and for women and men of all races.

The manager of the Employment Equity Department was recognized for her contribution to employment equity in 1990 when she was awarded the Citation for Citizenship from the federal Minister of State for Multiculturalism and Citizenship. Traditionally awarded to volunteers involved with multicultural projects, it was the first time the award has been made for outstanding achievement within a corporation.

### Corporate Awards

Ontario Hydro presented eight New Technology Awards in 1990 for outstanding technical achievements to employees working in the engineering and applied sciences field. Cost savings to Hydro customers arising from these accomplishments exceeded \$180 million.



**United Way contributions**  
by Hydro employees across  
Ontario increased significantly  
during 1990.

In 1990, Ontario Hydro also received more than 3,000 suggestions from employees as part of the corporate suggestion program. Over 80 per cent of their ideas were accepted. Eight silver awards were presented to employees whose suggestions provided more than \$1.5 million in cost savings for Hydro customers. Another 2,660 bronze awards were also earned by employees for ideas which improve on-the-job efficiency, safety, customer service and environmental protection.

### United Way

Ontario Hydro employees across the province contributed \$1,054,000 to the 1990 United Way Campaign, exceeding the target of \$900,000, and representing an increase of 23 per cent over 1989 givings.





## FINANCIAL HIGHLIGHTS

In 1990, Ontario Hydro's total revenues were \$6,484 million, an increase of \$138 million over 1989. This higher revenue resulted from an average 5.9 per cent increase in the price of electricity, partially offset by a decrease in the volume of electricity sales.

The reduction in the volume of electricity sales reflected the downturn in the Ontario economy and relatively milder winter weather in 1990. It was the first year-over-year decrease in the volume of electricity sales since the recession of 1982.

Total operating costs for 1990, including financing charges, amounted to \$6,355 million, a \$708 million increase over 1989. The rise in expenditures was due primarily to two factors: higher operation, maintenance and administration costs, and a substantial increase in power purchases.

The higher operation, maintenance and administration costs reflect the inflationary effects on labour and other costs, higher program costs for maintenance and restoration activities, and increased pension costs. The substantial increase in power purchases was necessary to comply with Ontario's acid gas regulation (resulting in a decrease in the use of Hydro's coal-fired generating stations), and to meet power system requirements.

Net income for 1990 was \$129 million, compared with \$699 million for 1989.

Capital expenditures for investment in fixed assets during 1990 amounted to \$3,544 million, a \$449 million increase

over 1989, reflecting continuing construction on the remaining three nuclear units at Darlington generating station, and upgrades to transmission and distribution facilities.

Cash provided from operations and available for investment in fixed assets decreased to \$754 million in 1990 from \$1,705 million in 1989, due to lower net income and the effect of higher non-cash working capital balances.

## RESULTS OF OPERATIONS

### Revenues

Primary revenues for 1990 amounted to \$6,462 million, a 3.3 per cent increase representing \$207 million over 1989.

Electricity sales to municipal utilities, rural retail customers, and direct industrial customers totalled 130,875 million kilowatt-hours. Ontario's economic downturn, strikes in the industrial sector, and milder winter weather in 1990 caused the volume of primary energy to fall 2.3 per cent compared to 1989.

The average 1990 electricity price increase was 5.9 per cent. Municipal utilities paid an average of 6.1 per cent more for their electricity in 1990, while rural retail prices increased by an average of 5.3 per cent, and direct industrial prices rose by an average of 5.6 per cent.

The rural price takes into account \$100 million in assistance provided by all Ontario electricity consumers to reduce the electricity bills of year-round rural residential customers.

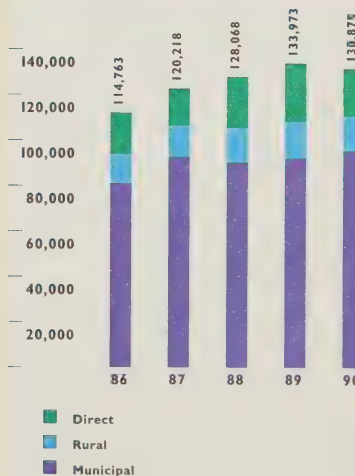
### Total Revenues

Millions of dollars



### Primary Energy

Millions of kilowatt-hours





Secondary revenues for 1990, mainly from exporting electricity to utilities in the United States, came to \$22 million. Compared with 1989, this represents a decrease of \$69 million, or 75.8 per cent. This decrease is mainly attributable to curtailing export sales, which mostly come from coal-generated electricity, to ensure Ontario Hydro's acid gas emissions were below the 1990 limit specified by the provincial government regulation.

### Major Power Production Sources

Ontario's electricity needs are met by a number of different sources. Water-powered generating stations, which are relatively inexpensive to operate, have traditionally provided a significant amount of the electricity used by Ontario Hydro customers.

The total capacity of hydraulic facilities has, in fact, risen since the 1960s, but as Ontario's electricity needs grow, water power is providing a declining proportion of the system's total production. Most of Ontario's remaining water resources are not suitable for large, economic energy development. While new and smaller hydraulic developments are planned, their contribution will be limited by economics and site characteristics.

To meet Ontario's growing energy demand, Ontario Hydro has built nuclear generating stations which use natural

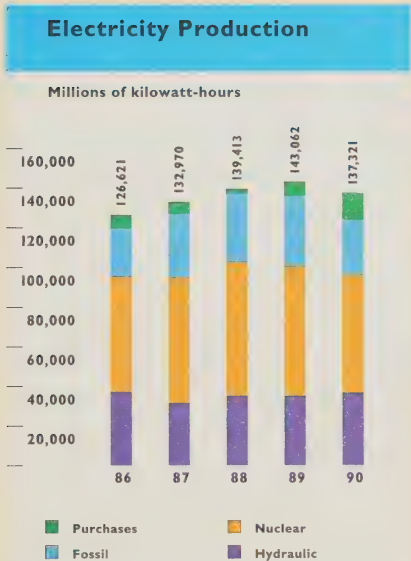
uranium. Nuclear stations reduce Hydro's need to operate coal-fired stations, which have higher fuel costs and produce acid gas emissions. Nonetheless, coal-fired generation plays a significant role in Ontario Hydro's power system in periods of high demand for electricity.

Ontario Hydro also purchases electricity, when needed, from neighbouring utilities, mainly in the United States and Manitoba. As well, Ontario Hydro has signed a firm, 22-year contract with Manitoba Hydro to buy up to 1,000 megawatts of power per year starting in the year 2000.

Historically, about 1,200 megawatts of non-utility generation, representing about 4 per cent of the Corporation's capacity, has been directly or indirectly connected to the Ontario Hydro system. Greater emphasis is now being placed on non-utility generation from private power developers to further balance Ontario's energy sources. As part of Ontario Hydro's demand/supply planning strategy, the Corporation is encouraging further development of non-utility generation. In 1989, Ontario Hydro issued its first request for proposals soliciting non-utility generation projects. The aim is to increase new non-utility generation to 2,100 megawatts by the year 2000. As of year-end, new non-utility generation projects totalling 296 megawatts were in operation, and developers of another 15 facilities totalling 316 megawatts of power are committed to construction of new energy projects.

In 1990, nuclear stations supplied 43.3 per cent of total system energy (including energy production for secondary sales), while hydraulic stations supplied 26.7 per cent, and fossil-fuelled generation provided 20.0 per cent. Purchased power – including non-utility generation in Ontario – provided the remaining 10.0 per cent. In 1989, nuclear, hydraulic and fossil-fuelled generation supplied 45.6 per cent, 24.7 per cent, and 24.5 per cent of total system energy, while purchases supplied 5.2 per cent.

A breakdown of the annual average cost per kilowatt-hour of energy from major generating sources is shown in the Five-Year Summary of Financial and Operating Statistics (see page 49).



## TOTAL OPERATING COSTS

Ontario Hydro's total operating costs for 1990 were \$6,355 million, \$708 million or 12.5 per cent higher than in 1989. The chart shows major operating costs for the period 1986 through 1990.

### Operation, Maintenance and Administration

In 1990, operation, maintenance and administration costs amounted to \$1,927 million, an increase of \$393 million over 1989. This increase of 25.6 per cent was due primarily to inflationary effects on labour and other costs, higher program costs for maintenance and restoration activities, and increased pension costs. In 1990 approximately \$94 million was spent on energy conservation programs, a \$32 million increase over 1989.

### Fuel and Fuel Related Costs

In 1990, fuel and the related costs of power purchases and the Nuclear Agreement - Payback, were 9.8 per cent higher than in 1989.

The 1990 fuel costs for coal, uranium, oil and water rental payments other than to the Province of Ontario came to \$1,035 million, \$97 million lower than in 1989. The decrease reflects lower nuclear generation and fossil-fuelled generation, requiring higher and more costly power purchases.

In 1990, Ontario Hydro purchased \$477 million worth of electricity from neighbouring utilities, an increase of \$247 million from 1989, making it a net importer of electricity, a trend which started in 1989. Ontario Hydro buys electricity

when it is economical to do so and during periods of peak demand or in emergencies. Purchases are also used to manage acid gas emission levels. The provincial regulatory limit on acid gas emissions was reduced in 1990 to 280,000 tonnes from 430,000 tonnes in 1989. Ontario Hydro's acid gas emissions are estimated at 245,000 tonnes for the year.

### Provincial Government Levies

Provincial government levies are payments made to the Province of Ontario with respect to the debt guarantee fee and water rentals.

In 1989, the Ontario government legislated that Ontario Hydro is required to pay to the Province an annual debt guarantee fee of one half of one per cent on the total outstanding debt guaranteed by the Province as of the preceding December 31. The fee for 1990 is \$133 million, \$51 million greater than 1989. The 1989 fee reflected the fact that the charge came into effect in May of that year.

Provincial water rental payments, for the use of provincial waters by Ontario Hydro in its hydraulic stations, amounted to \$102 million in 1990, an increase of \$7 million over 1989. The increased payments reflect the impact of higher water rental rates and increased hydraulic generation in 1990 over 1989.

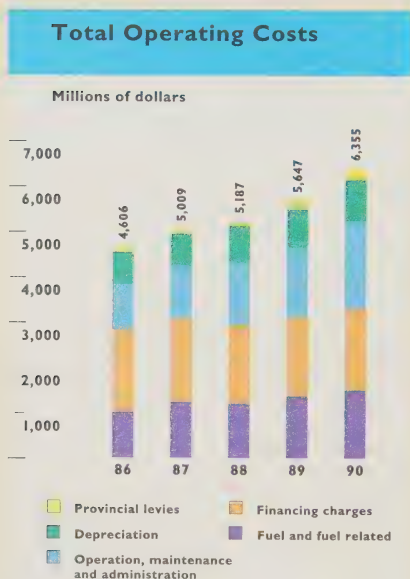
In addition to provincial government levies, Ontario Hydro also made, similar to other businesses, payments to various government agencies of approximately \$298 million in 1990. This amount includes payments in lieu of taxes to municipalities, provincial and federal sales taxes, Unemployment Insurance Commission premiums, Canada Pension Plan contributions and Employer Health Tax payments.

### Depreciation

Depreciation charged to operations totalled \$908 million in 1990, \$63 million or 7.5 per cent higher than in 1989. The increase reflects the depreciation costs for new generating, transmission and distribution facilities, partially offset by changes in estimates related to fixed asset removal costs.

### Financing Charges

Financing charges comprise interest charged to operations and foreign exchange costs. Interest charged to operations represents gross interest reduced by capitalized interest and interest earned on investments. By capitalizing interest, costs are properly allocated between current and future customers. Foreign exchange mainly represents the amortization of gains or losses on the principal amount of foreign debt.



Gross interest costs for 1990 amounted to \$3,204 million, an increase of \$188 million or 6.2 per cent over 1989. This increase was primarily related to additional funds borrowed during the year to finance construction of Darlington nuclear generating station. The increase was partially offset by: the effect of the stronger Canadian dollar relative to the United States dollar on foreign currency interest payments; and the refinancing of debt that matured at lower interest rates.

Interest charged to operations amounted to \$1,803 million in 1990, \$106 million or 6.2 per cent higher than in 1989. The increase was primarily due to interest on debt related to Darlington Unit 2 which was declared in-service in October 1990. This increase was partially offset by cash provided from operations used to reduce debt related to operating assets.

Foreign exchange provided a net gain of \$15 million in 1990, primarily as a result of lower hedging costs, compared to a net cost of \$31 million in 1989.

NET INCOME

The Power Corporation Act requires Ontario Hydro to include in electricity prices, in addition to recovery of operating costs, a net income provision comprising an appropriation for debt retirement and a provision for the stabilization of rates and contingencies. Ontario Hydro's policy is to develop net income requirements by examining the size and pattern of price increases, the availability of capital and financial performance. Ontario Hydro's net income was \$129 million in 1990, compared to \$699 million in 1989.

FINANCIAL INDICATORS

Ontario Hydro is a financially self-sustaining Corporation. The Corporation's main financial indicators are its cash flow coverage, interest coverage and debt ratios. Together, these financial indicators are used to monitor the financial performance of the Corporation. As a result of lower net income, the 1990 financial indicators were less favourable compared to the previous year.

Cash Flow Coverage

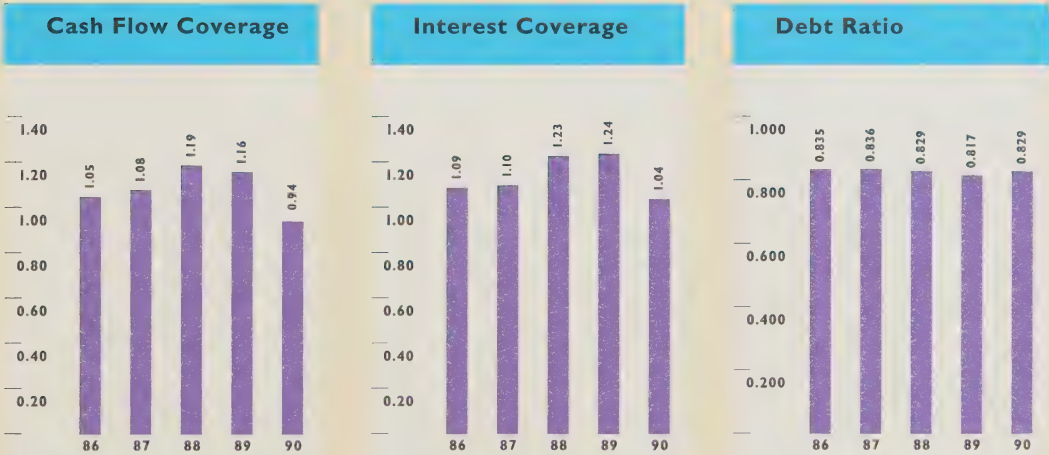
The cash flow coverage ratio measures the extent to which Ontario Hydro's operations provide cash to meet gross interest payments. The cash flow coverage ratio for 1990 was 0.94 reflecting the impact of a low net income and a high level of borrowing related to construction activities. The cash flow coverage ratio for 1989 was 1.16.

Interest Coverage

The level of interest coverage measures the extent to which net income contributes toward the ability of Ontario Hydro to meet its gross interest payments. The level of interest coverage for 1990 was 1.04 compared to 1.24 for 1989.

Debt Ratio

The debt ratio measures the extent to which Ontario Hydro's assets are financed by debt. A reduction in the debt ratio indicates a strengthening of financial position, as the increase in equity provides additional financial flexibility. The debt ratio at the end of 1990 was .829 compared to the 1989 ratio of .817.





## CAPITAL EXPENDITURES AND FINANCING

### Investment in Fixed Assets

Ontario Hydro invests in fixed assets to meet expected growth in the demand for electricity, to replace existing assets with facilities that are more economical, and to meet regulatory requirements. The total assets of the Corporation at the end of 1990 were \$39,373 million, 89.2 per cent consisting of fixed assets in service or under construction. This relatively high percentage reflects the capital intensive nature of Ontario Hydro's business.

The investment in fixed assets during 1990 totalled \$3,544 million. Of this amount, \$1,186 million was spent on construction at the Darlington nuclear generating station. Darlington Unit 2 was placed in service in October 1990 and the remaining three units are expected to be placed in-service by 1993. In addition, the 1990 expenditures reflect continued emphasis on investment in transmission and distribution facilities to maintain a high level of service and reliability. During 1990, \$865 million was spent on constructing major transmission and distribution facilities, such as the 500 kilovolt transmission lines in southwestern Ontario. In addition, \$314 million was spent on rehabilitation of Lambton and Lakeview generating stations. The level of investment in fixed assets for 1990 was somewhat higher than the average of the previous four years. The increase reflects a higher level of investment in the transmission and distribution facilities and rehabilitation work.

### Financing and Capital Markets

The cash required by Ontario Hydro to finance its investment in fixed assets comes from two major sources: operations and external borrowing. For 1990, operations provided \$754 million and net borrowing provided \$2,889 million. The cash provided from operations was down \$951 million from 1989 reflecting lower net income and the effect of higher non-cash working capital balances. The cash provided from financing consists of cash from issuing long-term debt; and the change in cash and cash equivalents, less the amount of cash used to retire long-term debt.

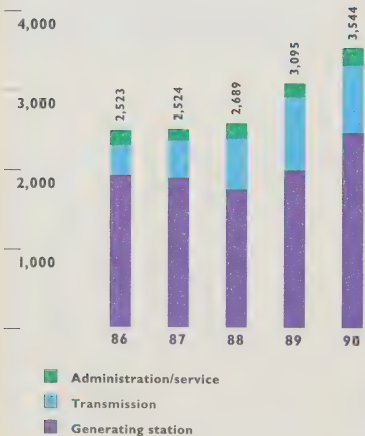
Proceeds from bonds sold by Ontario Hydro during 1990 amounted to \$4,148 million. In total, there were 12 Canadian issues and one United States issue, with an average annual coupon interest rate of 11.6 per cent for an average term to maturity of 13.2 years.

Cash amounting to \$1,633 million was used to retire maturing long-term debt in 1990, compared with \$1,656 million in 1989. No debt was redeemed prior to maturity in 1990, compared with \$403 million in 1989. Cash provided from financing was significantly higher in 1990 as compared to historical levels. This reflects the financing needs of a higher level of construction activities and a lower level of cash provided from operations.

In December 1990, Ontario Hydro offered a global bond issue of \$1,250 million, for simultaneous distribution in Canada, Europe, Asia and the United States in early 1991. The issue was the first global Canadian dollar issue and the largest Canadian international bond issue.

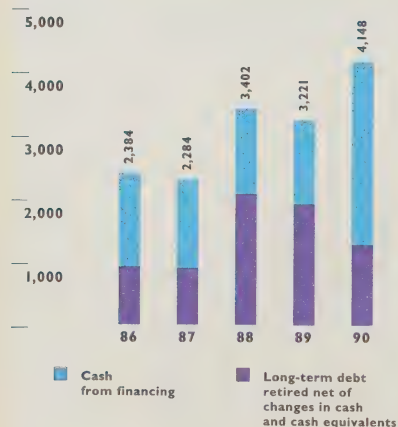
### Investment in Fixed Assets

Millions of dollars



### Cash Provided from Long-Term Debt Issued

Millions of dollars



## MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL REPORTING

The accompanying financial statements of Ontario Hydro are the responsibility of management and have been prepared in accordance with accounting principles generally accepted in Canada, applied on a basis consistent with that of the preceding year. The significant accounting policies followed by Ontario Hydro are described in the Summary of Significant Accounting Policies. The preparation of financial statements necessarily involves the use of estimates based on management's judgement, particularly when transactions affecting the current accounting period cannot be finalized with certainty until future periods. The financial statements have been properly prepared within reasonable limits of materiality and in light of information available up to March 11, 1991. The information presented elsewhere in the Annual Report is consistent with that in the financial statements.

Management maintains a system of internal controls designed to provide reasonable assurance that the assets are safeguarded and that reliable financial information is available on a timely basis. The system includes formal policies and procedures and an organizational structure that provides for appropriate delegation of authority and segregation of responsibilities. An internal audit function independently evaluates the effectiveness of these internal controls on an ongoing basis and reports its findings to management and the Audit Committee of the Board of Directors.

The financial statements have been examined by Ernst & Young, independent external auditors appointed by the Lieutenant Governor in Council of Ontario. The external

auditors' responsibility is to express their opinion on whether the financial statements are fairly presented in accordance with generally accepted accounting principles. The Auditors' Report, which appears below, outlines the scope of their examination and their opinion.

The Board of Directors, through the Audit Committee, is responsible for ensuring that management fulfils its responsibilities for financial reporting and internal controls. The Audit Committee meets periodically with management, the internal auditors and the external auditors to satisfy itself that each group has properly discharged its respective responsibility, and to review the financial statements before recommending approval by the Board of Directors. The external auditors have direct and full access to the Audit Committee, with and without the presence of management, to discuss their audit and their findings as to the integrity of Ontario Hydro's financial reporting and the effectiveness of the system of internal controls.

On behalf of Management



Chairman, President  
and Chief Executive Officer



Senior Vice-President  
Finance and Services

Toronto, Canada,  
March 11, 1991

## AUDITORS' REPORT

### To the Board of Directors of Ontario Hydro:

We have audited the statement of financial position of Ontario Hydro as at December 31, 1990 and the statements of operations, accumulated debt retirement appropriations, reserve for stabilization of rates and contingencies and source of cash used for investment in fixed assets for the year then ended. These financial statements are the responsibility of Ontario Hydro's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the

accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of Ontario Hydro as at December 31, 1990 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles.



Toronto, Canada,  
March 11, 1991

Chartered Accountants



## SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying financial statements have been prepared in accordance with accounting principles generally accepted in Canada, applied on a basis consistent with that of the preceding year. The significant accounting policies followed by Ontario Hydro are described below.

**Rate setting**

Ontario Hydro has broad powers to generate, supply and deliver electric power throughout the Province of Ontario. The Corporation operates under the Power Corporation Act and is subject to provisions of the Ontario Energy Board Act.

Under the provisions of the Power Corporation Act, the price payable by municipal corporations is the cost of operating and maintaining the system, depreciation, interest, and the amounts appropriated for debt retirement and stabilization of rates and contingencies. The debt retirement appropriation is the amount required under the Act to accumulate on a sinking fund basis over 40 years a sum equal to the debt incurred for the cost of the fixed assets in service. The appropriation for, or withdrawal from, the stabilization of rates and contingencies reserve is an amount established to maintain a sound financial position and to stabilize the effect of cost fluctuations.

Under the provisions of the Ontario Energy Board Act, a public hearing before the Ontario Energy Board is required to review any changes in electricity rates proposed by Ontario Hydro which affect its municipal utilities, direct industrial customers, or, if the Minister of Energy so directs, rural retail customers. The Ontario Energy Board then submits its recommendations to the Minister of Energy. After considering the recommendations of the Ontario Energy Board, Ontario Hydro's Board of Directors, under the authority of the Power Corporation Act, establishes the electricity rates to be charged to customers.

If the Board of Directors specifies an amount related to a certain transaction be included in future electricity rates that, in accordance with the accounting policies summarized below, would be charged or credited to operations in the current year, then this amount is deferred and amortized to future operations on a basis consistent with its inclusion in rates.

**Fixed assets**

Fixed assets in service include operating facilities and non-operating reserve facilities. Construction in progress includes fixed assets under construction and heavy water held for use in nuclear generating stations under construction.

Fixed assets are capitalized at cost which comprises: material; labour; engineering costs; overheads; depreciation on service equipment; interest applicable to capital construction activities; and for new facilities, the costs of training initial operating staff. In the case of generating

facilities, the cost also includes the net cost of commissioning which comprises the cost of start-up less the value attributed to energy produced by generation facilities during their commissioning periods. For multi-unit facilities, a proportionate share of the cost of common facilities is placed in-service with each major operating unit. The cost of heavy water comprises the direct cost of production and applicable overheads, as well as interest and depreciation on the heavy water production facilities and the estimated removal costs of these facilities. Leases which transfer the benefits and risks of ownership of assets to Ontario Hydro are capitalized.

Interest is capitalized on construction in progress at rates (1990 - 10.8 per cent, 1989 - 10.8 per cent) which approximate the average cost of long-term funds borrowed in the years in which expenditures have been made for fixed assets under construction. If the construction period of a project is extended and the construction activities are continued, interest is capitalized during the period of extension provided that the project has a reasonable expectation of being completed.

If a project is cancelled or deferred indefinitely with a low probability of resuming construction, all costs including the costs of cancellation are written off to operations.

If fixed assets are removed from operations and mothballed for future use, termed non-operating reserve facilities, the costs of mothballing are charged to operations.

**Depreciation**

The capital costs of fixed assets in service are depreciated on a straight-line basis. Depreciation rates for the various classes of assets are based on their estimated service lives. Major components of generating stations are depreciated over either the lesser of the service life expectancy of the component or the remaining service life of the associated generating station.

The estimated service lives of assets in the major classes are:

Generating stations	
- hydraulic	- 65 to 100 years
- fossil	- 40 years
- nuclear	- 40 years
Heavy water	- over the period ending in the year 2040
Transmission and distribution facilities	- 20 to 55 years
Heavy water production facilities	- 20 years
Administration and service facilities	- 5 to 65 years

In accordance with group depreciation practices, for normal retirements the cost of fixed assets retired is charged to accumulated depreciation with no gain or loss reflected in operations. However, gains and losses on sales of fixed assets and losses on premature retirements, are charged to operations in the year incurred as adjustments to depreciation expense.

When the costs of removal less residual value, termed removal costs, on retirements of fixed assets can reasonably be estimated and are significant, provisions for these costs, except for those related to heavy water production facilities, are charged to depreciation expense on an annuity basis over the remaining service life of the related fixed assets. For heavy water production facilities, provisions for removal costs are charged to heavy water production costs on a straight-line basis over the remaining service life of the related facilities. Other removal costs are charged to depreciation expense as incurred. Removal costs include the estimated costs of decommissioning nuclear and fossil stations and heavy water production facilities, and the estimated costs of removing certain nuclear reactor fuel channels.

The estimated service lives of fixed assets and the significant assumptions underlying the estimates of fixed asset removal costs are subject to periodic review. Any changes arising out of such a review are implemented on a remaining service life basis from the year the changes can first be reflected in electricity prices.

Non-operating reserve facilities are amortized so that any estimated loss in value is charged to depreciation expense on a straight-line basis over their expected non-operating period.

### **Unamortized advances for fuel supplies**

As part of its program to ensure the adequate supply of fuels for its generating stations, Ontario Hydro has entered into long-term fuel supply contracts. Where these contracts require Ontario Hydro to make payments for pre-production costs to suppliers in advance of the fuel delivery, these payments and associated costs, including interest, are carried in the accounts as unamortized advances for fuel supplies. The advances are amortized to fuel inventory as the fuels are delivered.

### **Fuel for electric generation**

Fuel used for electric generation comprises the average inventory costs of fuel consumed, charges for commissioning energy produced, and provisions for disposal of nuclear fuel irradiated during the period. The inventory cost of fuel consumed comprises fuel purchases, transportation and

handling costs, and the amortization of advances for fuel supplies. Transportation costs include charges for interest and depreciation on railway equipment owned by Ontario Hydro. The charges for commissioning energy produced during the period represent the incremental operating and fuel costs of producing the same quantity of energy at generating units displaced because of the commissioning activity. The costs for disposal of nuclear fuel irradiated in each period are charged to operations based on estimated future expenditures and interest accumulating to the estimated date of disposal. Estimates of expenditures, interest and escalation rates, and the date of disposal are subject to periodic review. Adjustments resulting from changes in estimates are charged to operations on an annuity basis over the period from the year the changes can first be reflected in electricity prices to the estimated in-service date of the disposal facility.

### **Foreign currency translation**

Current monetary assets and liabilities in foreign currencies are translated to Canadian currency at year-end rates of exchange and the resultant exchange gains or losses are credited or charged to operations. Long-term debt payable in foreign currencies is translated to Canadian currency at year-end rates of exchange. Resulting unrealized exchange gains or losses are deferred and included in unamortized debt costs, and are amortized to operations on an annuity basis over the remaining life of the related debt.

Foreign exchange gains or losses on hedges of long-term debt payable in foreign currencies are deferred and included in unamortized debt costs. The deferred gains or losses related to principal payments are amortized to operations on an annuity basis over the remaining period to the year in which the hedged principal payments are due. The deferred gains or losses related to interest payments are credited or charged to operations in the year in which the hedged interest payments are due.

Foreign exchange gains or losses on early redemption of long-term debt are deferred and included in unamortized debt costs if the exposure in the foreign currency related to the redeemed debt is not reduced as a result of the refinancing of the redeemed debt in the same currency. These deferred gains or losses are amortized on an annuity basis over the period to the original maturity date of the redeemed debt. If the foreign currency exposure is reduced as a result of the early redemption of debt, the resulting foreign exchange gains or losses related to the redeemed debt are credited or charged to operations.

### **Unamortized debt costs**

Unamortized debt costs include the unamortized amounts related to unrealized foreign exchange gains or losses resulting from the translation of foreign currency long-term debt; foreign exchange gains or losses on hedges; foreign exchange gains or losses on the early redemption of long-term debt; discounts or premiums arising from the issuance of debt or the acquisition of debt prior to maturity; and discounts or premiums accrued on foreign currency hedges.

Debt discounts or premiums arising from the issuance of debt are amortized over the period to maturity of the debt. Discounts or premiums on debt acquired prior to the date of maturity are amortized over the period from the acquisition date to the original maturity date of the debt. Discounts or premiums on foreign currency hedges are credited or charged to operations over the terms of the individual hedges.

### **Nuclear agreement - payback**

Ontario Hydro, Atomic Energy of Canada Limited and the Province of Ontario are parties to a joint undertaking for the construction and operation of Units 1 and 2 of Pickering nuclear generating station, with ownership of these units being vested in Ontario Hydro. Contributions to the capital cost by Atomic Energy of Canada Limited and the Province of Ontario amounted to \$258 million and these have been deducted in arriving at the value of fixed assets in service in respect of Pickering Units 1 and 2. Ontario Hydro is required to make monthly payments, termed "payback", until the year 2003 to each of the parties in proportion to their capital contributions. Payback, in a broad sense, represents the net operational advantage of having the power generated by Pickering Units 1 and 2, compared with power generated by coal-fired units similar to Lambton Units 1 and 2.

During the 1983 through 1988 shutdown period for replacement of pressure tubes in Pickering Units 1 and 2, the payback calculations resulted in negative payback amounts. These amounts have been credited against the cost of operations over the shutdown period and the accumulated amounts, plus interest, are included in the accounts as long-term accounts receivable. The accumulated negative payback amounts, plus interest, are to be offset against future positive payback amounts payable over the remaining term of the Agreement to Atomic Energy of Canada Limited and to the Province of Ontario, commencing with the return to operation of the last of the two units in November 1988.

### **Pension plan**

The pension plan is a contributory, defined benefit plan covering all regular employees of Ontario Hydro. Pension costs for accounting purposes are actuarially determined based on the assumptions that reflect management's best estimate of the effect of future events on the actuarial present value of accrued pension benefits, and the valuation of pension plan assets using a five-year market value average. Pension plan surpluses and deficiencies are amortized on an annuity basis over the expected average remaining period of service of the employees covered by Ontario Hydro's pension plan.

### **Research and development**

Research and development costs are charged to operations in the year incurred, except for those related directly to the design or construction of a specific capital facility which are capitalized as part of the facility.

# STATEMENT OF OPERATIONS

for the year ended December 31, 1990

1990

1989

millions of dollars

## Revenues

### Primary power and energy

Municipal utilities	4,373	4,209
Rural retail customers	1,297	1,256
Direct industrial customers	792	790

6,462 6,255

### Secondary power and energy (note 1)

22 91

6,484 6,346

## Costs

### Operation, maintenance and administration

1,927 1,534

### Fuel used for electric generation

1,035 1,132

### Power purchased

477 230

### Nuclear agreement - payback

(15) 1

### Provincial government levies (note 2)

235 177

### Depreciation (note 3)

908 845

4,567 3,919

## Income before financing charges

1,917 2,427

## Financing charges

### Interest (note 4)

1,803 1,697

### Foreign exchange

(15) 31

1,788 1,728

## Net income

129 699

## Appropriation for:

### Debt retirement

374 357

### Stabilization of rates and contingencies

(245) 342

129 699

See accompanying summary of significant accounting policies and notes to financial statements.



# STATEMENT OF FINANCIAL POSITION

as at December 31, 1990

1990

1989

millions of dollars

## ASSETS

### Fixed assets (note 5)

Fixed assets in service	32,497	27,786
Less accumulated depreciation	7,823	7,017
	24,674	20,769
Construction in progress	10,465	11,593
	35,139	32,362

### Current assets

Accounts receivable	751	788
Fuel for electric generation (note 6)	1,352	1,108
Materials and supplies, at cost	398	339
	2,501	2,235

### Other assets

Unamortized debt costs	248	218
Unamortized advances for fuel supplies (note 7)	709	728
Unamortized deferred costs (note 8)	227	313
Long-term accounts receivable and other assets	549	421
	1,733	1,680
	39,373	36,277

See accompanying summary of significant accounting policies and notes to financial statements.

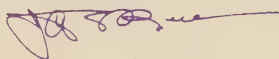


	1990	1989
	<i>millions of dollars</i>	
<b>LIABILITIES</b>		
<b>Long-term debt</b> (note 9)	<b>27,701</b>	25,141
<b>Current liabilities</b>		
Bank indebtedness (note 10)	<b>622</b>	356
Accounts payable and accrued charges	<b>727</b>	919
Short-term notes payable	<b>108</b>	-
Accrued interest	<b>768</b>	742
Long-term debt payable within one year	<b>1,677</b>	1,661
	<b>3,902</b>	3,678
<b>Other liabilities</b>		
Long-term accounts payable and accrued charges	<b>230</b>	222
Accrued fixed asset removal and irradiated fuel disposal costs (note 11)	<b>1,124</b>	949
	<b>1,354</b>	1,171
<b>CONTINGENCIES</b> (notes 7 and 13)		
<b>EQUITY</b>		
Accumulated debt retirement appropriations	<b>4,301</b>	3,927
Reserve for stabilization of rates and contingencies	<b>1,988</b>	2,233
Contributions from the Province of Ontario as assistance for rural construction	<b>127</b>	127
	<b>6,416</b>	6,287
	<b>39,373</b>	36,277

On behalf of the Board of Directors



Chairman, President and  
Chief Executive Officer



Vice-Chairman

Toronto, Canada,  
March 11, 1991

# STATEMENT OF ACCUMULATED DEBT RETIREMENT APPROPRIATIONS

for the year ended December 31, 1990

	Municipal Utilities	Power District (Rural Retail and Direct Industrial Customers)	Total <b>1990</b>	1989
<i>millions of dollars</i>				
Balances at beginning of year	2,719	1,208	<b>3,927</b>	3,570
Appropriation	255	119	<b>374</b>	357
Balances at end of year	2,974	1,327	<b>4,301</b>	3,927

## STATEMENT OF RESERVE FOR STABILIZATION OF RATES AND CONTINGENCIES

for the year ended December 31, 1990

	Held for the benefit of all customers	Held for the benefit of certain groups of customers			Total	1989
		Municipal Utilities	Rural Retail Customers	Direct Industrial Customers	<b>1990</b>	
<i>millions of dollars</i>						
Balances at beginning of year	2,217	1	13	2	<b>2,233</b>	1,891
Appropriation (withdrawal)	(250)	-	1	4	<b>(245)</b>	342
Balances at end of year	1,967	1	14	6	<b>1,988</b>	2,233

See accompanying summary of significant accounting policies and notes to financial statements.

# STATEMENT OF SOURCE OF CASH USED FOR INVESTMENT IN FIXED ASSETS

for the year ended December 31, 1990

**1990**

1989

millions of dollars

**Cash provided from operations** (note 12)

**754**

1,705

**Cash provided from financing**

Long-term debt issued

**4,148**

3,221

Long-term debt retired

**(1,633)**

(2,059)

**2,515**

1,162

Changes in cash and cash equivalents - decrease (note 12)

**374**

168

Cash provided from financing

**2,889**

1,330

**Cash provided for investment in assets**

**3,643**

3,035

Cash used for investment in other assets

**(51)**

(43)

Cash used for investment in fixed assets

**3,592**

2,992

Changes in accounts payable and accrued charges

affecting investment in fixed assets - (decrease) increase

**(48)**

103

**Investment in fixed assets** (note 12)

**3,544**

3,095

See accompanying summary of significant accounting policies and notes to financial statements.

**1. Secondary power and energy**

Secondary power and energy revenues include \$20 million (1989 - \$87 million) from sales of electricity to United States utilities.

**2. Provincial government levies**

	<b>1990</b>	1989
	<i>millions of dollars</i>	
Provincial water rentals	<b>102</b>	95
Provincial debt guarantee fee	<b>133</b>	82
	<b>235</b>	177

Provincial government levies are the amounts charged by the Ontario provincial government for the debt guarantee fee and water rentals.

**Provincial water rentals:**

Provincial water rentals are the amounts paid to the Province of Ontario for the use of water for hydraulic generation.

**Provincial debt guarantee fee:**

In May 1989, the Province of Ontario legislated that Ontario Hydro is required to pay to the Province an annual debt guarantee fee of one half of one per cent on the total outstanding debt guaranteed by the Province as of the preceding December 31. For 1989, the fee of \$82 million reflects the fact that the fee came into effect in May 1989.

**3. Depreciation**

	<b>1990</b>	1989
	<i>millions of dollars</i>	
Depreciation of fixed assets in service	<b>858</b>	792
Amortization of deferred costs	<b>39</b>	40
Fixed asset removal costs		
– provision for fuel channel removal costs	<b>55</b>	77
– provision for decommissioning costs	<b>32</b>	33
– other removal costs	<b>38</b>	22
	<b>1,022</b>	964
Less:		
Depreciation charged to – construction in progress	<b>59</b>	53
– heavy water production	<b>50</b>	51
– fuel for electric generation	<b>2</b>	2
Net gain on sales of fixed assets	<b>3</b>	13
	<b>114</b>	119
	<b>908</b>	845

#### 4. Interest

	1990	1989
	<i>millions of dollars</i>	
Interest on bonds, notes, and other debt	3,096	2,932
Interest on accrued fixed asset removal and irradiated fuel disposal costs	108	84
	3,204	3,016
Less:		
Interest charged to – construction in progress	1,169	1,016
– heavy water production	71	77
– fuel for electric generation	78	82
Interest earned on investments	83	144
	1,401	1,319
	1,803	1,697

#### 5. Fixed assets

	1990		
	<i>Assets in Service</i>	<i>Accumulated Depreciation</i>	<i>Construction in Progress</i>
	<i>millions of dollars</i>		
Generating stations – hydraulic	1,972	689	81
– fossil	3,992	1,630	527
– nuclear	13,545	2,118	7,718
Heavy water	2,907	340	1,181
Transmission and distribution	7,349	1,797	839
Heavy water production facilities	1,129	551	-
Administration and service facilities	1,603	698	119
	32,497	7,823	10,465
	1989		
	<i>Assets in Service</i>	<i>Accumulated Depreciation</i>	<i>Construction in Progress</i>
	<i>millions of dollars</i>		
Generating stations – hydraulic	1,923	657	51
– fossil	3,732	1,539	169
– nuclear	10,874	1,785	8,837
Heavy water	2,507	294	1,316
Transmission and distribution	6,197	1,641	1,122
Heavy water production facilities	1,127	498	-
Administration and service facilities	1,426	603	98
	27,786	7,017	11,593



## 5. Fixed assets (continued)

A major portion of the construction in progress as at December 31, 1990 relates to the construction program for the Darlington nuclear generating station. The cost of construction in progress associated with this program, including heavy water, amounted to \$8,268 million as at December 31, 1990 (1989 - \$9,885 million).

Darlington Unit 2 was placed in-service for commercial operation in October 1990. The remaining three units are planned to be placed in-service by the end of 1993. When

completed, the Darlington nuclear generating station will provide a total of 3,524 megawatts of dependable capacity. The estimated cost to complete the Darlington construction program is \$1,882 million, including cost escalation and interest of approximately \$1,197 million. Because of the uncertainties associated with long construction lead times and planned in-service dates, the estimated cost to complete the station is subject to change.

## 6. Fuel for electric generation

	1990	1989
	<i>millions of dollars</i>	
Inventories – uranium	733	700
– coal	518	396
– oil	101	12
	<b>1,352</b>	<b>1,108</b>

## 7. Unamortized advances for fuel supplies

	1990	1989
	<i>millions of dollars</i>	
Uranium – Rio Algom Limited	399	406
– Denison Mines Limited	310	322
	<b>709</b>	<b>728</b>

Unamortized advances for fuel supplies are recovered as fuel is delivered. Over the next five years, the amortization of advances for uranium supplies under the current amortization schedule is expected to be about \$32 million for the contract with Rio Algom Limited and about \$68 million for Denison Mines Limited (Denison).

Ontario Hydro has long-term contracts with Denison and Rio Algom Limited for uranium supplies through to 2012 and 2027, respectively. Ontario Hydro's current forecast of the annual requirements for uranium is about 1,800 megagrams for 1991, decreasing to about 1,700 megagrams by 1995. The uranium inventory as at December 31, 1990, plus the contracted deliveries through to the end of 1993 exceed the forecasted requirements to the end of 1993 by about 900 megagrams. Starting in 1994 through to 2012, contracted deliveries exceed forecasted requirements of the nuclear generating facilities currently in service and under construction by about 1,000 megagrams per year. Ontario Hydro's options for managing the oversupply include, under

specified conditions, cancellation or renegotiation of the contracts. In the event that a contract is cancelled, the supplier is not required to refund any outstanding advances.

On March 11, 1991, Ontario Hydro's Board of Directors authorized management to notify Denison that under the terms of the Uranium Supply Contract (the Contract), the price for uranium concentrate be amended for 1991 and 1992. If Denison accepts the amended price, Ontario Hydro would be required to pay the amended price for uranium concentrate deliveries in 1991 and 1992. If Denison does not accept the amended price, Ontario Hydro may terminate the Contract effective December 31, 1992. However, at this time, the outcome with respect to the notification to Denison is not determinable. If the contract is terminated, it is expected that the outstanding advances and associated costs would not be charged directly to operations but, under the rate setting authority of Ontario Hydro's Board of Directors, would be deferred and amortized for recovery through future electricity rates.

## 8. Unamortized deferred costs

	1990	1989
	<i>millions of dollars</i>	
Bruce heavy water plant D	111	148
Wesleyville generating station	7	10
	118	158
Fuel oil contract	58	87
Coal purchase agreement	51	68
	227	313

Unamortized deferred costs are amounts from prior years that the Board of Directors, under its rate setting authority, has determined be deferred and amortized for recovery through electricity rates on a straight-line basis over a specified period

of years. Accordingly, in 1990, \$39 million and \$46 million (1989 - \$40 million and \$46 million) were charged respectively to depreciation and fuel used for electric generation.

## 9. Long-term debt

	1990	1989
	<i>millions of dollars</i>	
Bonds and notes payable	29,292	26,694
Other long-term debt	86	108
	29,378	26,802
Less payable within one year	1,677	1,661
	27,701	25,141

Bonds and notes payable, expressed in Canadian dollars, are summarized by years of maturity and by the currency in which they are payable in the table shown on the following page.

## 9. Long-term debt (continued)

Years of Maturity	1990			Weighted Average Coupon Rate	1989	
	Principal Outstanding				Principal Outstanding	Weighted Average Coupon Rate
	Canadian	Foreign	Total		Total	
	millions of dollars				millions of dollars	per cent
1990	-	-	-		1,639	
1991	1,380	273	1,653		1,645	
1992	1,119	902	2,021		2,036	
1993	2,759	41	2,800		2,822	
1994	1,363	564	1,927		1,891	
1995	1,959	738	2,697		-	
1 - 5 years	8,580	2,518	11,098	11.0	10,033	11.0
6 - 10 years	5,908	623	6,531	10.0	5,416	9.6
11 - 15 years	2,541	968	3,509	11.2	3,651	11.6
16 - 20 years	3,446	1,835	5,281	10.4	5,368	10.0
21 - 25 years	971	902	1,873	13.2	2,226	13.5
26 - 30 years	1,000	-	1,000	10.9	-	-
	22,446	6,846	29,292	10.8	26,694	10.8

### Currency in which payable:

Canadian dollars	22,446	19,936
United States dollars	6,846	6,753
United Kingdom pounds sterling	-	5
	29,292	26,694

Bonds and notes payable are either held, or guaranteed as to principal and interest, by the Province of Ontario.

Bonds and notes payable in United States dollars include Cdn. \$5,056 million (1989 - Cdn. \$5,096 million) of Ontario Hydro bonds held by the Province of Ontario and having terms identical with Province of Ontario issues sold in the United States on behalf of Ontario Hydro.

Ontario Hydro has entered into financial arrangements to hedge a portion of the foreign currency exposure related to principal and interest payments with respect to long-term debt. These arrangements are primarily in forward exchange contracts and foreign currency swap contracts.

Forward exchange contracts amounted to U.S. \$1,128 million as at December 31, 1990 (1989 - U.S. \$1,995 million), having a weighted average Canadian dollar exchange rate of 1.27 (1989 - 1.26). These forward exchange contracts hedge principal and interest payments amounting to U.S. \$350 million due in 1991 and the remaining U.S. \$778 million hedge principal and interest payments due over the period 1992 through 1998. In addition, foreign currency swap contracts exchange U.S. \$850 million of principal and interest payments due over the period 1991 through 1995, into Cdn. \$1,095 million.

## 9. Long-term debt (continued)

<i>Other Long-Term Debt:</i>	<i>Years of Maturity</i>	<i>Interest Rate</i>	<b>1990</b>	1989
		<i>per cent</i>	<i>millions of dollars</i>	
Balance due to Atomic Energy of Canada Limited				
on purchase of Bruce heavy water plant A	1992	7.8	<b>47</b>	67
Capitalized lease obligation for the Head Office				
building, payable in U.S. dollars	2005	8.0	<b>38</b>	40
Capitalized lease obligations for transport and				
service equipment	1991	6.3		
	to 1995	to 11.9	<b>1</b>	1
			<b>86</b>	108

Payments required on the above debt, excluding interest, will total \$55 million over the next five years. The amount payable within one year is \$24 million (1989 - \$22 million).

## 10. Bank indebtedness

Bank indebtedness includes short-term bank lines of credit available to Ontario Hydro in the amount of \$600 million. The lines of credit are unsecured and bear interest at the Canadian prime rate.

## 11. Accrued fixed asset removal and irradiated fuel disposal costs

	<b>1990</b>	1989
	<i>millions of dollars</i>	
Accrued fixed asset removal costs		
- accrued decommissioning costs	<b>330</b>	267
- accrued fuel channel removal costs	<b>278</b>	250
	<b>608</b>	517
Accrued irradiated fuel disposal costs	<b>516</b>	432
	<b>1,124</b>	949

### Fixed asset removal costs:

Fixed asset removal costs are the costs of removing certain fuel channels, which are expected to be replaced during the life of the reactors, from the nuclear reactors, and the costs of decommissioning nuclear and fossil generating stations and heavy water production facilities after the end of their service lives. The significant assumptions used in estimating fixed asset removal costs were:

- removal of fuel channels in Pickering nuclear generating station A Units 3 and 4 in the 1989 to 1992 (1989 - 1989 to

1992) period; Bruce nuclear generating station A Units 1 and 2 in the 1993 to 1999 (1989 - 1996 to 2000) period and Units 3 and 4 in the 2002 to 2010 (1989 - 2002 to 2010) period; Pickering B in the 2012 to 2017 (1989 - 2012 to 2017) period; Bruce B in the 2014 to 2019 (1989 - 2014 to 2019) period; and Darlington nuclear generating station in the 2019 to 2024 period;

## 11. Accrued fixed asset removal and irradiated fuel disposal costs (continued)

- decommissioning of nuclear generating stations in the 2042 to 2065 period on the deferred dismantlement basis (dismantlement following storage with surveillance for a 30-year period after shutdown of the reactors), and a transportation distance of 1,000 kilometres from nuclear generating facilities to disposal facilities;
- dismantlement of Bruce heavy water plants A, B and D in the 1995 to 2005 period;
- interest rates through to 2065 ranging from 9% to 10% (1989 - 10% to 11%); and
- escalation rates through to 2065 ranging from 4% to 7% (1989 - 4% to 9%).

Because of possible changes to the above factors and the methods used for decommissioning and fuel channel removal, these costs are subject to revision.

### **Irradiated fuel disposal costs:**

The significant assumptions used in estimating the future irradiated fuel disposal costs were:

- an in-service date of the year 2025 (1989 - 2010) for irradiated nuclear fuel disposal facilities;
- a transportation distance of 1,000 kilometres from nuclear generating facilities to disposal facilities;
- interest rates through to the disposal date ranging from 9% to 10% (1989 - 10% to 11%); and
- escalation rates through to the disposal date ranging from 4% to 7% (1989 - 4% to 9%).

Because of the uncertainties associated with the technology of disposal, and the above factors, these costs are subject to change.

---

## 12. Statement of source of cash used for investment in fixed assets

The statement of source of cash used for investment in fixed assets reports the investment in fixed assets resulting from the cash flows from operating and financing activities and the effects of changes in accounts payable and accrued charges affecting investment in fixed assets during the year. This statement focuses on the investment in fixed assets in view of Ontario Hydro's current level of construction activities which are financed from the two sources, cash provided from operations and cash provided from financing.

Cash provided from financing represents the amount of cash provided from the issuance of long-term debt, less the amount of cash used to retire long-term debt; and the effects of changes in cash and cash equivalents, defined to be cash and short-term investments less bank indebtedness and short-term notes payable.

The components of cash provided from operations and changes in cash and cash equivalents are summarized on the next page.



## 12. Statement of source of cash used for investment in fixed assets (continued)

	1990	1989
	<i>millions of dollars</i>	
<b>Cash provided from operations</b>		
Net Income	129	699
Items not requiring cash in the current year:		
Depreciation	908	845
Amortization of foreign exchange gains and losses	(48)	(52)
Provision for irradiated fuel disposal costs	35	27
Other	121	178
	1,145	1,697
Changes in non-cash working capital and long-term accounts payable affecting operations - decrease (increase)	(391)	8
Cash provided from operations	754	1,705
<b>Changes in cash and cash equivalents</b>		
Bank indebtedness - increase	266	668
Short-term notes payable - increase (decrease)	108	(500)
Changes in cash and cash equivalents	374	168
<b>Investment in fixed assets</b>		
The reconciliation of the change in fixed assets during the year with the investment in fixed assets for the year is summarized below:		
Change in fixed assets	2,777	2,387
Depreciation of fixed assets in service	858	792
Less depreciation charged to heavy water production and construction in progress	(108)	(104)
	750	688
Net book value of fixed assets sold or retired	17	20
Investment in fixed assets	3,544	3,095

### 13. Pension, insurance and health care

Ontario Hydro's employee benefit programs include the pension plan, the group life insurance plan and the long-term disability plan. The assets of these plans and the changes in assets during the year are shown in the financial statements of The Pension and Insurance Fund and are not included in Ontario Hydro's financial statements.

#### **Pension plan:**

On March 30, 1990, the Ontario Hydro Employees' Union, Local 1000 of the Canadian Union of Public Employees - C.L.C. (OHEU) commenced a legal action in the Supreme Court of Ontario. The legal action requires that, among other things, Ontario Hydro comply with the statutory obligation to contribute the difference between the amount of the contributions of the employees and the amount of the cost of the pension benefits as determined by actuarial valuations for the years 1965, 1980 to 1985, and 1987 to 1989, plus pre-judgment interest. Ontario Hydro has filed a notice of appearance in response to the legal action. No amount has been accrued in the 1990 financial statements to provide for the contingency with respect to these years as, at this time, the results of the legal action are not determinable. However, as part of a two-year OHEU contract settlement which includes improvements to pension benefits, Ontario Hydro has agreed to pay \$381 million into the Pension Plan over the period 1990 through 1992 in respect of the Corporation's contributions and related interest for all of the years in dispute through 1989. The amount includes \$71 million paid by Ontario Hydro in January 1990 pursuant to the Court of Appeal decision regarding 1986 contributions by the Corporation. Interest is payable at The Pension Fund rate of return on the balance unpaid after April 27, 1990. The payments are made without prejudice to any legal defense Ontario Hydro may raise regarding the amounts which may be legally owing in respect of the years in dispute. The amount of \$381 million and any additional amount that Ontario Hydro is required to

contribute to the Pension Plan with respect to the years in dispute are to be charged to the accrued pension account in the statement of financial position. In the event that the accrued pension amount does not have future benefit to Ontario Hydro as determined in accordance with the recommendations of The Canadian Institute of Chartered Accountants, it is expected that management would request the Board of Directors to specify that such loss in value be deferred and amortized to future operations on a basis consistent with its inclusion in electricity prices.

The pension costs for 1990 were \$165 million (1989 - \$65 million). In 1990, about \$124 million (1989 - \$49 million) of the pension costs were charged to operations and \$41 million (1989 - \$16 million) were capitalized.

The pension costs for 1990 were actuarially determined for accounting purposes using the following significant assumptions which take into consideration the long-term nature of the pension plan:

- rate used to discount future pension benefits - 8.50% (1989 - 8.50%);
- rate used to estimate interest cost and return on investments - 8.50% (1989 - 8.50%);
- salary escalation rate - 7.00% (1989 - 7.00%);
- rate used to estimate improvements in pension benefits to partially offset the effect of increase in cost of living - 3.75% (1989 - 2.50%);
- average retirement age for males - 60.6 (1989 - 59.1) and for females - 61.5 (1989 - 60.2); and
- average remaining period of service of the employees - 16 years (1989 - 17 years).

Based on these assumptions, the actuarial present value of the accrued pension benefits is estimated to be \$4,756 million as at December 31, 1990 (1989 - \$3,524 million), and the pension plan assets available for these benefits were \$4,489 million (1989 - \$3,882 million) based on a five-year market value average.

**13. Pension, insurance and health care (continued)**

**Group life insurance plan:**

The group life insurance plan had assets of \$13 million as at December 31, 1990 (December 31, 1989 - \$21 million). Effective April 1, 1986, the assets are being used to pay both the employee and employer insurance premiums for all members of the plan until such time as the assets are fully utilized.

**Group health care plan:**

Ontario Hydro provides a group health care plan to its employees. In 1990, the cost of providing these benefits was \$37 million (1989 - \$36 million).

**Other post employment benefits:**

In addition to pension benefits, Ontario Hydro provides group life insurance and health care benefits to its retired employees and, in certain cases, their surviving spouses and unmarried dependents. The cost of providing the group life insurance and health care benefits is charged to operations as incurred. In 1990, the cost of providing these benefits was \$12 million (1989 - \$12 million).

---

**14. Research and development**

In 1990 approximately \$148 million of research and development costs were charged to operations and \$16 million

were capitalized (1989 - \$112 million and \$10 million, respectively).

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**15. Comparative figures**

Certain of the 1989 comparative figures in the statement of source of cash used for investment in fixed assets have been

reclassified to conform with the 1990 financial statement presentation.

---

	1990	1989	1988	1987	1986
<i>millions of dollars</i>					
<b>Revenues</b>					
Primary power and energy					
Municipal utilities	4,373	4,209	3,824	3,441	3,116
Rural retail customers	1,297	1,256	1,103	968	885
Direct industrial customers	792	790	730	675	604
	6,462	6,255	5,657	5,084	4,605
Secondary power and energy	22	91	156	196	248
	6,484	6,346	5,813	5,280	4,853
<b>Costs</b>					
Operation, maintenance and administration	1,927	1,534	1,354	1,150	1,014
Fuel and fuel-related	1,497	1,363	1,190	1,223	1,003
Provincial government levies	235	177	91	85	86
Depreciation	908	845	811	723	705
	4,567	3,919	3,446	3,181	2,808
<b>Income before financing charges</b>	1,917	2,427	2,367	2,099	2,045
<b>Financing charges</b>					
Gross interest	3,204	3,016	2,845	2,744	2,684
Capitalized interest	(1,318)	(1,175)	(1,012)	(978)	(1,038)
Investment income	(83)	(144)	(93)	(64)	(61)
Foreign exchange	(15)	31	1	126	213
	1,788	1,728	1,741	1,828	1,798
<b>Net income</b>	129	699	626	271	247
<i>millions of dollars</i>					
<b>Financial position</b>					
Total assets	39,373	36,277	34,358	32,657	31,357
Fixed assets	35,139	32,362	29,975	27,986	26,103
Long-term debt	27,701	25,141	24,240	23,862	23,494
Equity	6,416	6,287	5,588	4,962	4,691
<i>millions of dollars</i>					
<b>Cash flows</b>					
Cash provided from operations	754	1,705	1,368	1,204	1,040
Cash provided from financing	2,889	1,330	1,350	1,397	1,475
Cash used for investment in fixed assets	3,592	2,992	2,673	2,452	2,585
Investment in fixed assets	3,544	3,095	2,689	2,524	2,523
<b>Financial indicators</b>					
Debt ratio <sup>(1)</sup>	0.829	0.817	0.829	0.836	0.835
Cash flow coverage <sup>(2)</sup>	0.94	1.16	1.19	1.08	1.05
Interest coverage <sup>(3)</sup>	1.04	1.24	1.23	1.10	1.09
<i>millions of kilowatt-hours</i>					
<b>Primary energy sales<sup>(4)</sup></b>					
Municipal utilities	92,116	93,715	89,607	84,058	80,026
Rural retail customers	19,444	19,767	18,365	16,599	16,279
Direct industrial customers	19,315	20,491	20,096	19,561	18,458
	130,875	133,973	128,068	120,218	114,763
<b>Secondary energy sales<sup>(4)</sup></b>	577	2,292	5,019	6,515	6,046
<b>Energy and Demand</b>					
Installed dependable peak capacity (megawatts) <sup>(5)</sup>	31,150	30,271	30,333	30,080	30,701
December primary peak demand (megawatts)	21,794	23,630	23,012	20,524	20,609
Primary energy made available (millions of kilowatt-hours) <sup>(6)</sup>	136,744	140,770	134,395	126,455	120,574

	1990	1989	1988	1987	1986
<b>Number of primary customers<sup>(4)</sup></b>					
Municipal utilities	314	315	316	316	316
Rural retail customers	915,027	891,304	863,039	835,937	813,193
Direct industrial customers	113	112	110	108	106
<i>in cents per kilowatt-hour of total energy sales</i>					
<b>Average revenue<sup>(4)</sup></b>					
Primary power and energy					
Municipal utilities	4.747	4.491	4.268	4.094	3.894
Rural retail customers	7.352	6.801	6.361	6.248	5.901
Direct industrial customers	4.100	3.855	3.633	3.451	3.272
All primary customers combined	5.024	4.715	4.453	4.268	4.058
Secondary power and energy	3.813	3.970	3.108	3.008	4.102
All classifications combined	5.001	4.702	4.402	4.203	4.060
<i>expressed as a per cent</i>					
<b>Average rate increases</b>					
Municipal utilities	6.1	5.0	4.7	5.2	4.0
Rural retail customers	5.3	5.9	4.4	6.6	3.8
Direct industrial customers	5.6	6.0	5.2	5.6	4.3
All primary customers combined	5.9	5.3	4.7	5.5	4.0
<b>Average cost<sup>(4) (7)</sup></b>					
<i>in cents per kilowatt-hour of energy generated</i>					
<b>Hydraulic</b>					
Operation, maintenance and administration	.271	.275	.270	.276	.213
Water rentals	.303	.287	.274	.285	.243
Depreciation, debt guarantee fee and financing charges	.373	.389	.386	.465	.413
	.947	.951	.930	1.026	.869
<b>Nuclear</b>					
Operation, maintenance and administration	1.100	.739	.623	.508	.481
Uranium	.490	.458	.453	.481	.481
Depreciation, debt guarantee fee and financing charges	2.631	2.241	2.078	2.193	2.073
	4.221	3.438	3.154	3.182	3.035
<b>Fossil</b>					
Operation, maintenance and administration	.899	.600	.530	.488	.550
Coal, gas and oil	2.479	2.217	2.258	2.600	2.746
Depreciation, debt guarantee fee and financing charges	1.274	.931	.918	.933	1.367
	4.652	3.748	3.706	4.021	4.663
<b>Average number of employees</b>					
Regular	26,821	25,147	24,543	24,066	23,373
Non-regular <sup>(8)</sup>	9,653	8,929	7,930	8,081	9,032

(1) Debt ratio represents debt (bonds and notes payable, short-term notes payable, other long-term debt, accrued fixed asset removal and irradiated fuel disposal costs and bank indebtedness less unamortized foreign exchange gains and losses) divided by debt plus equity.

(2) Cash flow coverage ratio represents funds provided from operations plus net interest, and interest charged to fuel for electric generation less interest on accrued provisions divided by interest on bonds, notes and other debt.

(3) Interest coverage represents net income plus interest on bonds, notes, and other debt divided by interest on bonds, notes and other debt.

(4) Figures for 1990 are preliminary.

(5) Installed dependable peak capacity represents the net output power supplied by all generating units, and includes non-operat-

ing reserve facilities: 1990 - 1,551 megawatts; 1989 - 2,109 megawatts; 1988 - 2,109 megawatts; 1987 - 2,667 megawatts; and 1986 - 3,784 megawatts. Also included are net firm power purchase contracts.

(6) Primary energy made available represents primary energy sales plus transmission losses and energy used for heavy water production and generation projects.

(7) Average cost per kilowatt-hour represents the costs attributable to generation but excludes the costs related to transmission, distribution and corporate administrative activities. These figures reflect the historical accounting costs of operating facilities and the actual energy generated by these facilities during the year.

(8) The majority of non-regular staff are construction trades persons.



**FIVE-YEAR SUMMARY OF STATISTICS - CUSTOMERS SERVED BY ONTARIO  
HYDRO AND ASSOCIATED MUNICIPAL UTILITIES**

	<b>1990<sup>(1)</sup></b>	1989	1988	1987	1986
<i>in thousands</i>					
<b>Total number of customers</b>					
Residential	<b>3,100</b>	3,062	2,958	2,868	2,781
Farm	<b>105</b>	105	106	106	106
Commercial and industrial	<b>420</b>	407	392	377	365
	<b>3,625</b>	3,574	3,456	3,351	3,252
<i>in kilowatt-hours per customer</i>					
<b>Average annual use</b>					
Residential	<b>11,500</b>	11,856	11,588	11,019	10,909
Farm	<b>23,933</b>	24,762	24,795	23,547	23,004
Commercial and industrial	<b>220,000</b>	225,103	224,705	220,834	216,666
<i>in cents per kilowatt-hour</i>					
<b>Average revenue</b>					
Residential	<b>6.93</b>	6.50	6.22	5.98	5.63
Farm	<b>7.41</b>	7.06	6.67	6.48	6.00
Commercial and industrial	<b>5.22</b>	4.88	4.62	4.40	4.20
All customers	<b>5.56</b>	5.37	5.10	4.87	4.63

(1) Figures for 1990 are preliminary.

**BOARD OF DIRECTORS**

J.A. Gordon Bell,  
Thornhill  
Vice-Chairman,  
Ontario Hydro  
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and Chief Operating Officer,  
The Bank of Nova Scotia

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Scarborough  
Chairman, Scarborough  
Public Utilities Commission

F. Tom Cowan,  
Mount Brydges  
Farmer, Chimo Farms Ltd.,  
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Springs Group of Companies

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Ontario Hydro

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Former Canadian  
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Service Employees  
International Union

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Sudbury  
Hinds and Sinclair  
Barristers and Solicitors

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Vice-President,  
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Chancellor  
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Officer and President,  
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Dean, Faculty of Engineering  
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University of Western Ontario

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St. Catharines  
President,  
St. Catharines Paving Ltd.

Dr. O. John C. Runnalls,  
Toronto  
Professor Emeritus of Nuclear  
Engineering and Energy  
Studies,  
University of Toronto

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J.A.G. Bell  
F.T. Cowan  
J.S. Hinds  
J.E. Hood

**Audit**

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R.E. Cavanagh  
A.G. Hearn  
J.E. Hood

**Management Resources**

J.A.G. Bell (Chairman)  
O.J.C. Runnalls  
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A.J. MacIntosh

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F.T. Cowan  
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G.A. Kenney-Wallace  
G. Mallette

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R.C. Franklin

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**Vice-Chairman**

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Finance and Services

Sam G. Horton  
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Arvo Niitenberg  
Operations

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Production

Alan R. Holt  
Corporate Planning

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Energy Management

John G. Matthew  
Property Development

William G. Morison  
(Retired Jan. 31/91)  
Design and Construction

Edythe A. (Dee) Parkinson  
Supply and Services

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Corporate Relations

Hal K. Wright  
Regions

**General Counsel  
and Secretary**

Larry E. Leonoff

**Treasurer**

Felix P. Chee

**REGIONAL DIRECTORS**

**Central Wholesale Region**

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Willowdale M2M 3T7

**Eastern Region**

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420 Dundas Street East,  
Belleville K8N 5C3

**Northeastern Region**

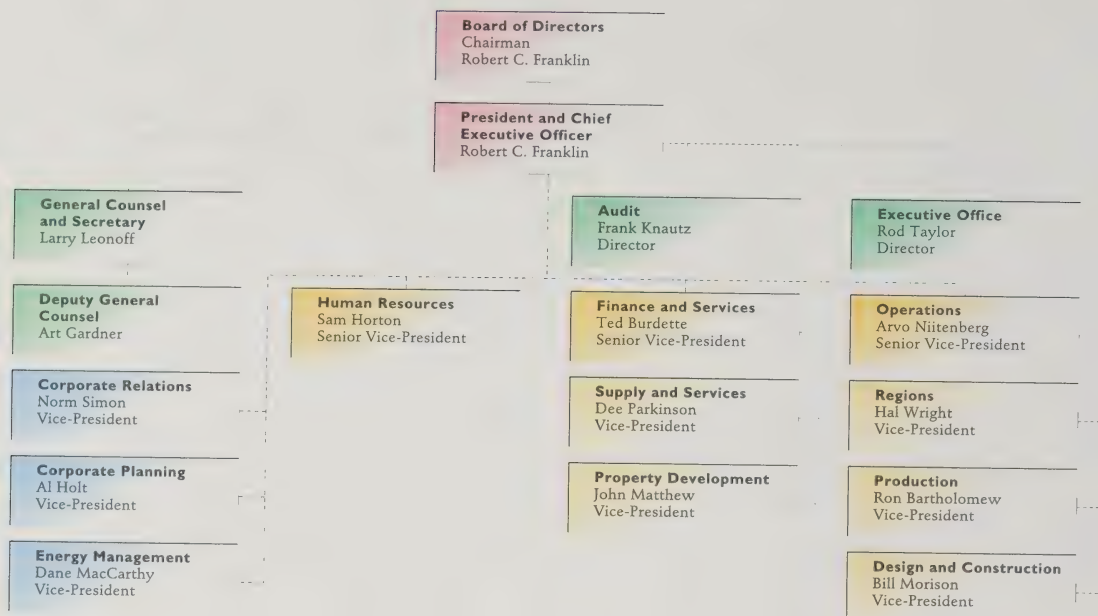
Guy R. (Bud) Barrett  
590 Graham Drive,  
North Bay P1B 8L4

**Northwestern Region**

Larry V. Doran  
34 Cumberland Street North,  
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**Western Region**

Dr. David A. Drinkwalter  
1075 Wellington Road,  
London N6E 1M1



### Corporate Planning Branch

Director of Corporate Programming  
Al Kupcis

Director of Environment  
Carole Burnham

Director of Research  
Don Mills

Chief Economist  
Economics and Forecasts  
Mitch Rothman

Director of System Planning  
Art Marriage

Director of Non-Utility Generation  
Paul Vrostko

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Director of Creative Operations and Communications  
Susan Jones

Manager, Corporate News  
Bob Cochrane

Manager, Corporate Relations Planning and Research  
Chris Chorlton

Manager, Government Relations and Public Hearings  
Rick Campbell

Aboriginal Relations and French Language Services Manager  
Ray Baril

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Director of Program Management  
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John McCredie

Project Manager  
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Brian Churchill

Project Manager  
In-Service Thermal Stations  
John Oreskovich

Project Manager  
Hydraulic Projects  
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Roger Whitehead

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Joe Walters

Director of Central Production Services  
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Ron Stewart

Director of Hydraulic Generation and Transmission Operations  
Vern Shute

Director of Central Wholesale Region  
Gord Sanford

Director of Eastern Region  
Dave Mills (Acting)

Director of Northeastern Region  
Bud Barrett

Director of Northwestern Region  
Larry Doran

Director of Western Region  
David Drinkwalter



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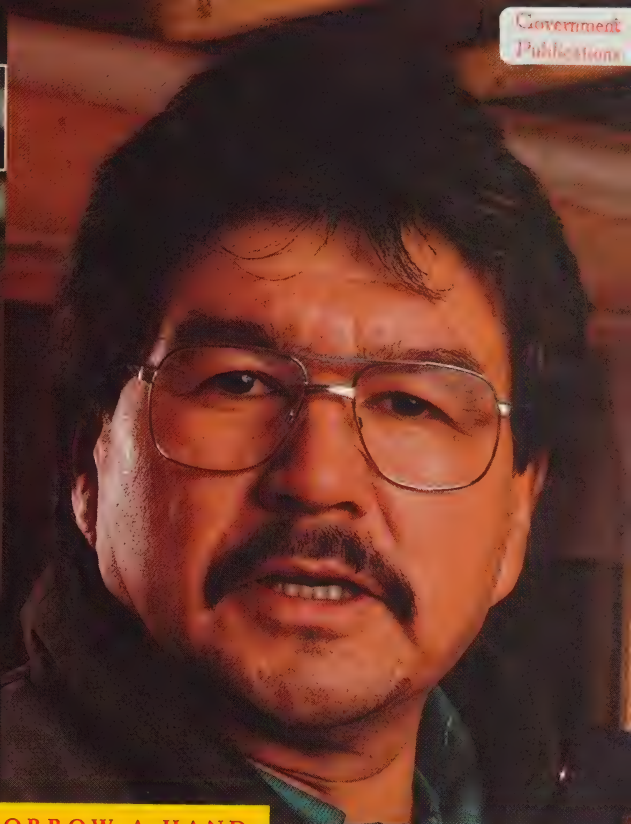
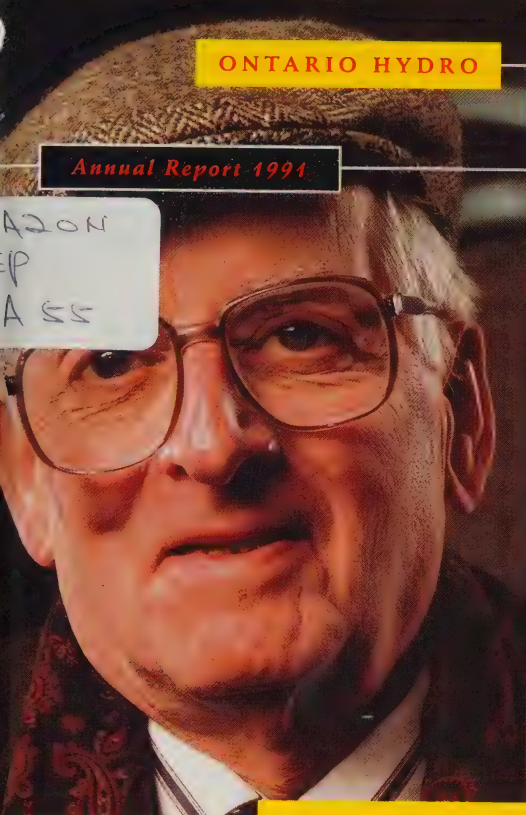
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ONTARIO HYDRO

Annual Report 1991

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LET'S GIVE TOMORROW A HAND



## ONTARIO HYDRO

serves the people of Ontario by supplying reliable electricity services at a competitive price. It provides consumers with information and programs on the wise use of energy and offers customers financial incentives to invest in energy efficient technology. Ontario Hydro has assets of more than \$43 billion, making it one of the largest public utilities in North America. The Corporation employs more than 28,000 regular and approximately 6,000 part-time and temporary staff.

Created in 1906 by special provincial statute, Ontario Hydro operates under the Power Corporation Act to deliver electricity throughout Ontario. It also produces and sells steam and hot water as primary products. It regulates Ontario's municipal utilities and, in co-operation with the Canadian Standards Association, is responsible for the inspection and approval of electrical equipment and wiring throughout the province.

Ontario Hydro operates 81 hydroelectric, nuclear and fossil-fuelled generating stations as well as a transmission system that distributes power to customers across the province.

The Corporation supplies electricity directly to about 925,000 rural retail customers. It also sells power to 311 municipal utilities serving 2.8 million Ontario customers, and provides electricity directly to almost 110 large industrial customers with load requirements in excess of five megawatts.

Ontario Hydro is a financially self-sustaining corporation without share capital. Bonds and notes issued by Hydro are guaranteed by the Province of Ontario. The Corporation is governed by a Board of Directors, consisting of up to 17 members. Sixteen members, including the Chair, are appointed by the Lieutenant-Governor-in-Council. The President is appointed by the Board. There are eight board committees: Finance, Audit, Management Resources, Social Responsibility, Technical Advisory, Pension and Insurance Fund Investment, Environment, and Aboriginal and Northern Affairs.

Ontario Hydro's head office is located at 700 University Avenue, Toronto, Ontario M5G 1X6. For more information or additional copies of this report please call our toll-free customer service number: 1-800-263-9000.

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## ONTARIO HYDRO BOARD OF DIRECTORS' REPORT FOR 1991

To the Honourable Brian Charlton, Minister of Energy

On behalf of the Board of Directors, I am pleased to submit to you Ontario Hydro's report on the financial position of the Corporation, as well as a discussion of issues and initiatives for 1991 and beyond.

We thank you and the Ministry of Energy staff for the co-operation extended over the year.

*M. Eliesen*

Marc Eliesen  
Chair of the Board of Directors  
April, 1992



### FINANCIAL HIGHLIGHTS

	1991	1990
<i>millions of dollars</i>		
Revenues	7,143	6,484
Net Income	204	129
Total Assets	43,244	39,373
Cash Used for Investment in Fixed Assets	3,356	3,592



There's a new emphasis at Ontario Hydro.

While maintaining our traditional mandate to provide reliable, affordable energy, we are increasing our efforts to manage demand and ensure that our work enhances Ontario's natural, social and economic environment.

The utility business is changing worldwide. Society at large is telling utilities they cannot continue to operate in the future as they have in the past.

During 1991 Ontario Hydro's activities reflected a company in transition marked by changing customer needs, new social demands and global economic pressures.

Ontario's recession continued to take its toll on the economy. Recognizing the increased importance of reliable and affordable electricity during times of economic hardship, Ontario Hydro implemented several important operational and strategic initiatives to continue providing our customers with the energy service they need while Ontario's economy struggles to recover.

We faced some simultaneous difficulties. Our nuclear system still performed below expectations although performance improved over 1990. Technical problems prevented us from bringing Darlington nuclear Unit 1 into service as planned. And older parts of hydroelectric, fossil, nuclear and transmission systems underwent rehabilitation.

As of 1991, Ontario Hydro has committed about \$4 billion to extend the lives of our fossil and hydroelectric stations and restore our nuclear performance. An additional \$1.4 billion has been committed to upgrade our transmission system.

Although costly, these efforts are critical to restoring our system to full operating capability. They will ensure the continued reliability of our system, improve its performance and delay the need to build major new generating stations.

In September, Ontario Hydro's management structure was reorganized to reflect our dual challenge of ensuring energy supply and reducing energy demand.

Hydro's policy, planning and strategic efforts were pulled together under the Chair's direction. These include the branches responsible for energy management, the environment, finance and human resources. All operating functions were united to report directly to the President. And two new Hydro Board Committees were formed to help guide our environmental activities and promote a better understanding of Aboriginal and northern affairs.

These organizational initiatives were made with a renewed spirit of partnership with our customers and the public who now demand Hydro projects provide tangible benefits beyond the undeniable advantages of a reasonably-priced, secure supply of electricity.

The unfavourable economic and operating conditions of 1991 affected Hydro's overall financial performance although net income improved over 1990. To maintain our financial health and offset rising operating costs, as well as the cost of bringing Darlington into service, we announced an 11.8 per cent rate increase for 1992—an increase we know our customers find particularly difficult in today's economy.

This is not the first double-digit rate increase in Hydro's history—in the mid-1970s rates rose consecutively by 13 per cent, 22 per cent and 30 per cent as significant blocks of new facilities went into service. We will continue to do our best to lessen the impact of future rate increases by improving our productivity, helping our customers reduce future energy bills, and cutting our costs.



In 1991 we intensified our efforts to help our customers save on their energy bills through demand management. By definition, managing demand—either by conserving electricity and/or using it more efficiently—requires a partnership. Hydro can develop and provide energy conservation and efficiency programs but only our customers, through their participation, can implement them successfully.

Electricity consumers slowed the growth of electricity demand in 1991 and saved an estimated 250 megawatts of power and over \$28 million in their annual energy bills. This success has been incorporated into our updated Demand/Supply Plan, which we revised in December. The new plan sets more aggressive energy conservation targets for the rest of the 1990s. We predict our customers can save 5,200 megawatts by the year 2000.

Our updated 25-year Demand/Supply Plan now defers major capital additions by at least seven years, which will also result in considerable capital savings. We will need to borrow \$9 billion less than originally projected between now and the year 2011.

To cut costs further, we cancelled our expensive uranium contracts with Rio Algom Ltd. and Denison Mines in Elliot Lake. This alone will save electricity consumers approximately \$1.2 billion over the next 10 years. The price of other major fuel, such as western Canadian coal, is expected to be significantly reduced in the coming years as well.

Internally, we reduced administrative and support budgets, and froze senior management's 1992 salaries at the 1991 level.

Hydro staff also continue to monitor their own processes in an effort to cut costs and improve productivity.

In the past few years Ontario Hydro's labour and management staff have worked together to develop an increasing number of quality improvement programs which have already resulted in more effective teamwork, better quality control and increased efficiency. The retubing of Pickering Unit 4 for instance is scheduled to take only 19 months, compared to the 54 months required to retube Unit 2.

Such improvement indicates more than Hydro's commitment to working more efficiently. It also reflects the new management and labour relations at Ontario Hydro. Our relationship with our two major bargaining groups, the Ontario Hydro Employees Union (CUPE Local 1000), and the Society of Ontario Hydro Professional and Administrative Employees is significantly better as a result of taking a fresh new approach to negotiations which emphasizes co-operation rather than confrontation. Hydro employees are working with a greater sense of partnership amongst themselves as we move toward the same goal—a truly customer-oriented energy company.

We would like to thank all those who help Ontario Hydro meet the province's energy needs—Hydro employees for their continuing contribution, the Ontario Hydro Board of Directors for their guidance, and the Ontario municipal electric utilities, and their representative organization, for their co-operation and support in serving the electricity consumers of Ontario. Finally we extend a special thanks to Robert Franklin whose vision and leadership during the past five years helped Ontario Hydro become more like the energy service company our customers expect.



Marc Eliesen  
*Chair*



Alan Holt  
*President*



# PARTNERSHIP

Reliable, affordable electricity at the flick of a switch. For generations, Ontarians have counted on a reliable source of power for their homes and businesses. And for generations, Ontario Hydro has provided customers with a stable, reasonably-priced supply of electricity.

We're determined to continue this tradition. We're seizing opportunities to build strong, dynamic relationships with all our customers so we can continue to use energy more wisely.

We're encouraging our customers to learn more about how Ontario Hydro can help them manage their energy needs more effectively. We're committed to improving the options we offer so that all of our customers—residential, commercial, agricultural and industrial—receive the best possible service.

Through our energy management programs, more and more consumers are learning to use electricity differently and more wisely. Customers are becoming "power savers." And whether that means a lower energy bill, less waste or a better living environment, the end result is the same. Saving energy is an investment in Ontario's future.

We're also working hard to forge strong, lasting relationships with Ontario's municipal utilities that serve many of our end-use consumers in Ontario's communities.

Ontario Hydro and our municipal utility partners across the province are striving to deliver the demand management message to customers so that everybody can get involved. And municipal utilities are passing that message on to their customers.

Together, we're helping homeowners throughout Ontario to use energy more efficiently and lower the cost of their monthly bills. From using energy efficient lighting and showerheads to installing improved insulation, residential customers can save power and live more comfortably at the same time.

Hydro is also helping our industrial and commercial customers. By switching to energy efficient lighting, high efficiency motors and taking advantage of Hydro's Power Saver energy audits and load shifting programs, companies are significantly lowering production costs and staying competitive.

In the town of Espanola, 72 kilometres west of Sudbury, the Espanola Hydro-Electric Commission, Ontario Hydro and the local community have joined forces to take advantage of an exciting **OPPORTUNITY**. They're all involved in Espanola Power Savers, a community project which tests some new ideas about energy efficiency and should save two megawatts of electricity. See page 6.

For Ontario businesses competing in today's global marketplace, reducing energy demand is vital for lowering production costs and staying one step ahead of the competition. At Ivaco Rolling Mills, a division of Ivaco Inc., which manufactures steel, managers are working with Ontario Hydro to use **INNOVATION** and technology to reduce power consumption. Just how it's paying off is explained on page 8.

Saving energy is everybody's business. To help our customers in Ontario's northern communities become more energy efficient and benefit from lower heating costs, we are working with First Nations to promote efficiency and reduce electricity demand. As a measure of this **CO-OPERATION**, 18,200 energy efficient homes are under construction in the Moose Factory First Nation community. Details on page 10.

In addition to working as partners with our customers to save electricity, we are also working together to plan Ontario's energy future. Jointly, we are reviewing Hydro's proposed plans and recommendations and adjusting them to better incorporate our customers' interests and expectations. In the village of Merrickville, 45 kilometres south of Ottawa, Hydro took the **INITIATIVE** to invite local groups to express their opinions about plans to modernize Ontario's smallest hydroelectric generating station. See page 12.

# OPPORTUNITY

Last June, the town of Espanola, a community of 6,000 people, 72 kilometres west of Sudbury, became the first in Canada to implement a comprehensive program to reduce energy consumption in every home and business. The Espanola Power Savers Project is a radical approach to conservation designed to evaluate the potential for widespread participation through partnership with the community.

Led by Program Manager Vicky Sharpe, this 18-month project aims to reduce Espanola's total electricity consumption by 20 percent. Through a combination of intensified community-based marketing, high financial incentives to customers, and direct installation of comprehensive measures in the town's 2,300 homes and businesses, Espanola will become Canada's most energy efficient community.

This "fast track" approach to conservation is one of the ways Ontario Hydro is attempting to meet our ambitious goals for electricity savings over the next decade. The concept is based on the premise that effective demand management requires a change in consumers' attitudes and behaviour towards electricity use. Such a fundamental change can only be achieved through increasing awareness of the potential of conservation and changing the way consumers make decisions about energy use. The Espanola Power Savers Project is designed to accelerate this process.

Partnership with the municipal utility, the town council, and individual residents is the key to success for the Espanola Power Savers Project, and for all community-based conservation. Solid community involvement and support for the project means that the conservation ethic remains in the town after the project's completion, as do the skills and knowledge gained.

For home and business owners, becoming a power saver begins with a comprehensive energy audit to recommend energy efficient measures, ranging from block heater timers to upgraded insulation, windows, and doors. On average, up to 80 percent of the costs of installing electrical energy saving measures are being covered by Ontario Hydro.

By project end, it is anticipated that almost every home and business will have been audited and had some conservation measures installed. With the energy saved, everyone in Espanola will benefit. Customers will pay less for electricity by reducing their consumption, and Espanola Hydro will be able to provide power to an additional 400–500 homes without any new capital investment.

The efforts in Espanola are on the leading edge of demand management in North America, and the results of the research will have major implications for the way we might involve the people of Ontario in energy conservation in the future.



*Ontario Hydro Espanola  
Program Manager, Vicky Sharpe*



*Espanola, a town of 6,000,  
became the first Power Savers  
community in Canada*



*A block heater timer can reduce  
heater usage by six hours and save  
to 60 per cent of energy used*



*"By working together on this project, Espanola Hydro, the Town of Espanola and Ontario Hydro have demonstrated the benefits of partnership. Everybody is so involved. The project also presents us with a challenge for the future. Once it's completed, we'll still be in the front lines promoting energy conservation."*

*Joyce Laplante, Office Supervisor, Espanola Hydro Electric Commission, Espanola, Ontario*



# INNOVATION

For Ontario Hydro's large industrial customers, growing energy costs can affect their companies' efforts to be competitive in today's global markets.

A division of Ivaco Inc., Ivaco Rolling Mills is one of eastern Ontario's heaviest power consumers. A steel plant and rolling mill complex, located in L'Orignal, eastern Ontario, the company supplies North American and key off-shore markets with a wide range of products made from metallurgically clean, ductile steel. Its two electric arc furnaces convert scrap metal into molten steel at 1,650 degrees Celsius. The company is a leader in the development of new energy-efficient technologies that will lower production costs and increase profitability.

Part of that leadership involves working with Ontario Hydro to monitor plant activities and identify opportunities for more efficient energy use and greater savings. For Ontario Hydro's Ralph Sheldrick, that means looking at different operations and recommending efficiency adjustments which will result in lower demand. These include the conversion to energy efficient lighting and installation of high efficiency motors which use less energy to do the same amount of work.

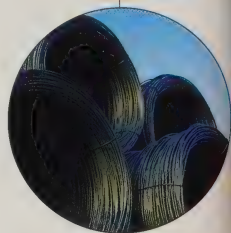
To take advantage of Hydro's time-of-use rates, where electricity is priced more cheaply when demand is lower during off-peak hours, Ivaco Rolling Mills installed a custom-configured smart computer demand management system to monitor, forecast and control total electrical consumption of the entire complex. As a result, the company's power needs decreased by almost 10 megawatts over two years, while productivity increased eight per cent.

Using advanced technology to measure demand, identify trends in energy usage and patterns of consumption, the system allows for the expansion of energy consuming processes while reducing peak power demand. This is accomplished by suspending one furnace from operation to control the level of demand while minimizing the impact on production.

By working with Ontario Hydro, Ivaco Rolling Mills' investment in energy-efficient technology pays off in reduced costs. By using the load shifting program, the company can transfer a greater proportion of its energy demand to off-peak periods. This will result in lower energy costs and a more competitive presence in the international marketplace.



*Ontario Hydro Customer  
Energy Services' Ralph Sheldrick*



*Ivaco wire rods rolled from  
heated steel billets*



*Ivaco's electric arc furnace  
heats scrap metal to molten steel  
prior to casting*





*"I believe very strongly that working with Ontario Hydro has helped us to find the right mix of technology and equipment to increase energy efficiency, reduce demand and lower our costs. With Hydro's support we're continuing to look for even greater efficiencies in the future."*

Tom Wong, P. Eng., Superintendent Maintenance, Ivaco Rolling Mills, L'Orignal, Ontario

# CO-OPERATION

As part of its commitment to help customers in Ontario's communities save energy, Ontario Hydro is working with the Moose Factory First Nation to construct 14 energy-efficient R-2000 homes in the local community. Located in the James Bay area, where temperatures drop as low as minus 50 degrees Celsius, the Moose Factory project is one of the largest R-2000 programs in Ontario's far north.

The R-2000 project was jointly developed by Moose Factory First Nation's Housing Director Wilbert Cheechoo, Moose Band Development Corporation's Dave Faries and Ontario Hydro's Andre Bisson. The energy-efficient R-2000 homes will provide a comfortable living environment for the new home owners, and will result in lower energy consumption and lower electricity bills. The homes will be built by Moose Band Development Corporation building trades employees trained in R-2000 construction techniques by the R-2000 arm of the Ontario Home Builders Association.

The R-2000 concept sets a new standard for home energy efficiency. R-2000 homes are better built homes with increased insulation and greater air sealing, and have a mechanically controlled ventilation system. Every house has a continuous air vapour barrier installed in its shell which reduces leaks to a minimum. With less drafts and air leaks than a conventional home, an R-2000 home is comfortable and more economical to run.

R-2000 homes also have superior air quality because of the Heat Recovery Ventilator units that remove odours, smoke and other pollutants and provide a controlled supply of fresh air. The unit works continuously to expel stale air from living areas, such as the kitchen, bathrooms and laundry room, and replace it with fresh air from outdoors. The controlled air exchange not only creates a living environment that's fresh but it also maintains the desirable level of humidity in the house to reduce condensation on the windows.

Through programs like the Moose Factory R-2000 project, Ontario Hydro is working with the Province's First Nations and other Aboriginal communities to promote energy efficiency to customers as well as helping to provide better quality housing for residents in Ontario's communities.



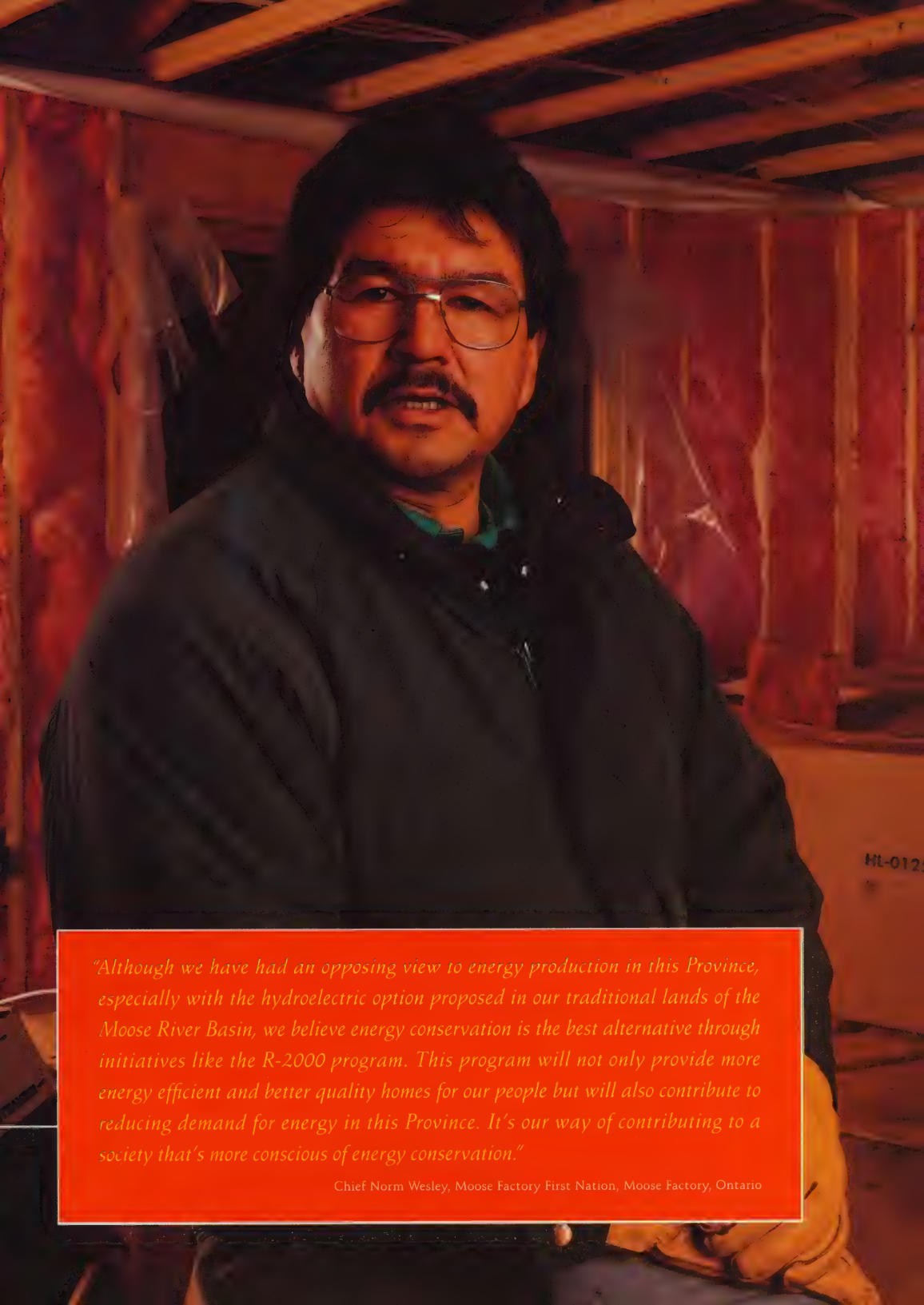
*Ontario Hydro Customer Energy Services' Andre Bisson*



*Moose Band Development Corporation Housing Director Wilbert Cheechoo*



*Moose Band Development Corporation Executive Director Dave Faries*



HL-012

*"Although we have had an opposing view to energy production in this Province, especially with the hydroelectric option proposed in our traditional lands of the Moose River Basin, we believe energy conservation is the best alternative through initiatives like the R-2000 program. This program will not only provide more energy efficient and better quality homes for our people but will also contribute to reducing demand for energy in this Province. It's our way of contributing to a society that's more conscious of energy conservation."*

Chief Norm Wesley, Moose Factory First Nation, Moose Factory, Ontario



# INITIATIVE

People in Ontario today want to have a say in what's taking place around them. As Ontario Hydro continues to upgrade our generating stations and transmission systems to improve our service to customers, we must remain sensitive to the impact our operations will have on local communities.

New projects are everybody's concern, and it's important that individuals and interested groups have the opportunity to share their ideas and points of view in the planning process. Since 1975, Ontario Hydro's public participation programs have encouraged potentially affected citizens and interested organizations to participate in the planning of new or upgraded facilities. Through these programs they can assess a proposed project's merits and drawbacks, raise their concerns about issues which affect them and provide additional information and insight. Hydro also provides opportunities for public involvement in the development of corporate plans and policies.

Last year, Ontario Hydro selected the Merrickville hydroelectric generating station in the village of Merrickville, 45 kilometres south of Ottawa, as the first to be assessed under the Small Hydraulic Assessment and Retrofit Program (SHARP). The program was established in 1988 to renew 33 of the smallest and oldest hydroelectric generating stations in the province. Planning for the modification of Merrickville—Ontario's smallest station—involved early consultation with the community.

For Project Engineer Mike Markovich, this entailed the involvement of local groups to review Hydro's proposal. Along with Hydro, Heritage Merrickville Foundation President Dr. Robert Nicholls, Merrickville and District Historical Society Treasurer Harold Gilmer and the Chair of the Local Architectural Conservation Advisory Committee, Phyllis Walker, participated throughout the planning process to ensure that the proposed station modification reflected the needs of the village.

The Merrickville station, which was built between 1914 and 1919 and sold to Hydro in 1950, may be retrofitted to replace the existing generating units. This will extend the station's life by about 80 years and double generating capacity to 1.8 megawatts. When completed, the improved facility will help meet Ontario's future energy needs without adversely affecting the local environment.



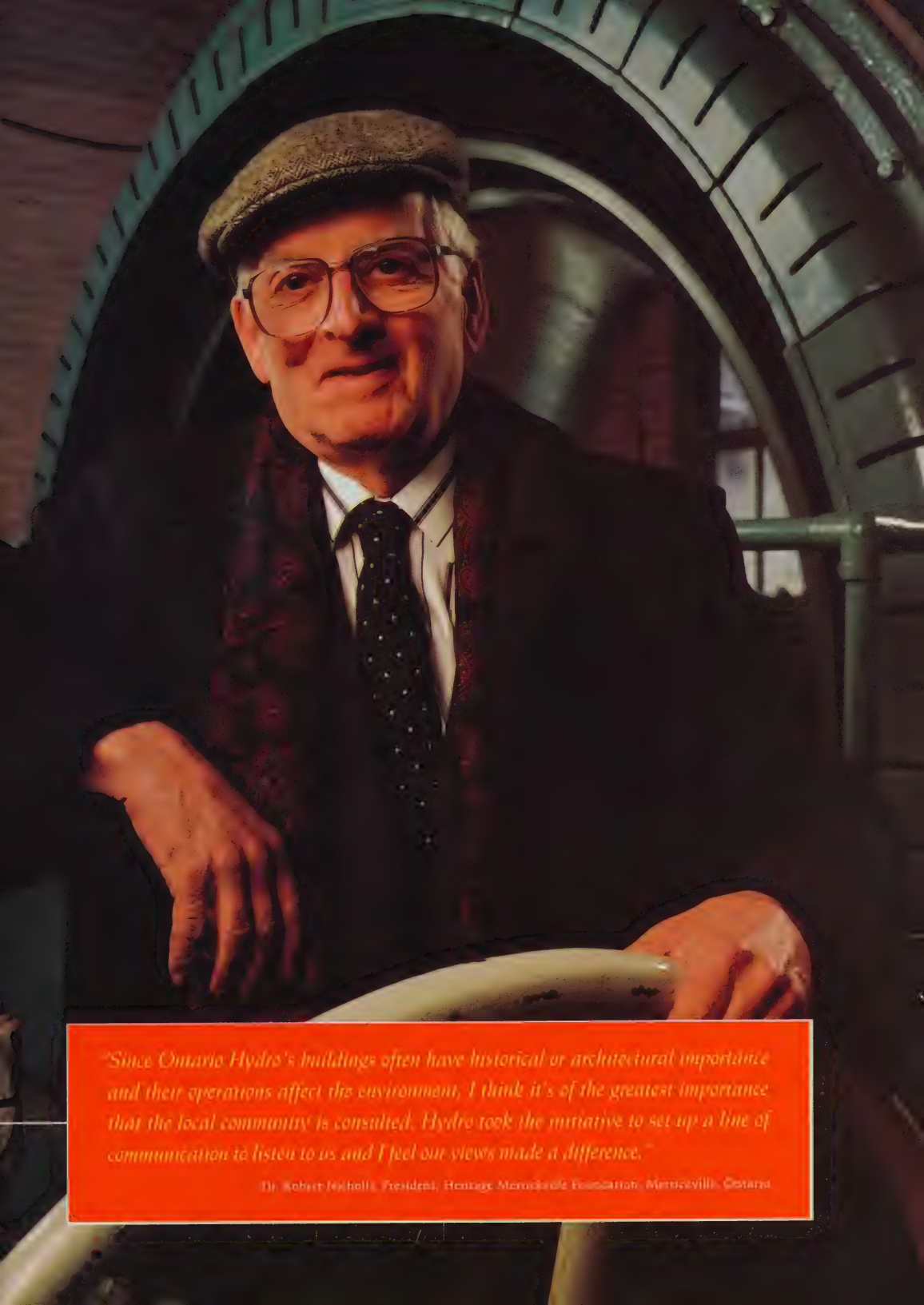
*Ontario Hydro Project Engineer  
Mike Markovich*



*Merrickville Hydroelectric  
Generating Station*



*Ontario Hydro's Keith Eastman discusses  
project proposal with Dr. Robert Nicholls,  
Harold Gilmer and Phyllis Walker*



*"Since Ontario Hydro's buildings often have historical or architectural importance and their operations affect the environment, I think it's of the greatest importance that the local community is consulted. Hydro took the initiative to set up a line of communication to listen to us and I feel our views made a difference."*

*Dr. Robert Nicholls, President, Heritage Merrickville Foundation, Merrickville, Ontario*



During 1991, Ontario Hydro made gains on several fronts, including customer energy efficiency, the environment, worker safety, and Aboriginal relations.

Electricity demand increased only marginally during 1991, reflecting the continuing recession in Ontario. Ontario Hydro supplied a total of 139.1 million megawatt-hours in 1991 including purchased power from non-utility generation in Ontario and neighbouring utilities. This is a 1.3 per cent increase over the 1990 supply of 137.3 million megawatt-hours.

Hydro's 1991 net income improved over 1990, but financial performance fell short of expectations. Although the 8.6 per cent increase in electricity rates in 1991 helped improve total revenues, total operating costs and capital expenditures were also higher.

In September, an 11.8 per cent increase in electricity rates was approved for 1992. The increase is largely the result of nuclear costs, primarily those associated with the Darlington generating station, and rehabilitation expenditures to maintain and replace aging transmission and generation facilities.

In April, the Environmental Assessment Board began its public hearings to review Hydro's 25-year Demand/Supply Plan, first published in 1989. In December, Hydro updated the Plan. The "Plan Update," released in January 1992, defers the need for new major supply as a result of revised longer-term demand forecasts due to slower economic growth, life extensions of existing fossil-fuelled plants, reduced short-term demand, and successful demand management initiatives.

The "Plan Update" continues to focus on helping customers manage their energy bills and use electricity more efficiently, getting the maximum output from the existing system by rehabilitating aging facilities, encouraging non-utility generation as required and further developing Ontario's hydroelectric potential.

### Energy Management

In 1991, Ontario Hydro invested almost \$179 million in our conservation and energy efficiency efforts. Of that, almost \$50 million was paid directly to electricity consumers, to help customers adopt electrically-efficient products, practices, equipment and technologies.

Customer energy services advisors and energy management representatives worked with consumers across Ontario to save an estimated 250 megawatts of power and over \$28 million in 1991 customer bill savings. That's enough electricity to meet the daily power needs of a city the size of St. Catharines.

By working with its industrial customers, Ontario Hydro is encouraging effective energy management and helping industry to become more competitive. In 1991, Hydro formed an energy management partnership with Canadian Pacific Forest Products in Thunder Bay. By using Hydro's load shifting program, which shifts some electricity use to off-peak hours, Canadian Pacific Forest Products should save approximately \$7 million in energy costs annually.



*Rehabilitation of aging generation stations and transmission facilities across Ontario continued in 1991 to ensure Hydro's system remains efficient, sensitive to the environment and continues to provide customers with a reliable source of electricity.*



*Hydro is helping our agricultural customers by promoting energy efficiency on Ontario's farms. Information, programs and incentives can help lower energy consumption and reduce operating costs on electrically intensive dairy, hog and poultry farms.*

Hydro also continued its four-year Street Smart Streetlighting conversion program for Ontario communities, begun in 1990. By the end of 1991, 200 communities had completed or started converting to efficient street lights through Ontario Hydro's program. This covers conversion of over 40 per cent of inefficient streetlighting in Ontario. The City of Kitchener received a \$600,000 incentive from Hydro in December to install energy-efficient streetlights. The conversion will save the city over \$300,000 in annual electricity costs and create enough energy savings to power about 400 homes.

Programs for residential customers included the distribution of light bulbs to 3.1 million Ontario households. Each household received two energy-saving, 52-watt incandescent light bulbs to replace the widely-used 60-watt bulbs. By switching to energy-saving light bulbs, customers can help reduce growth in electricity demand by up to 30 megawatts by the year 2000.

The success of Hydro's various demand management programs to date has increased the Corporation's longer-term targets to saving 9,860 megawatts by 2014, compared to 5,570 megawatts estimated in the 1989 Demand/Supply Plan. The increase not only reflects anticipated program benefits but also the introduction of higher efficiency standards in buildings and electrical equipment, and opportunities to promote alternative fuels in place of electricity, when economic.

### **Alternative Energy Sources**

Hydro supported various alternative energy projects in 1991. Among them, the Hugh MacMillan Photovoltaic Project is a solar electric installation under construction at Sunnybrook Hospital's Hugh MacMillan Rehabilitation Centre in North York. Jointly funded by Ontario Hydro, the Ontario Ministry of Energy and Energy, Mines and Resources Canada, it should contribute 100 kilowatts toward the hospital's power needs and help evaluate emerging solar energy technologies.

### **Environmental Initiatives**

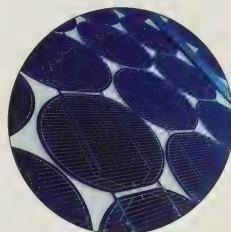
As part of Hydro's commitment to the environment, the Board of Directors established an Environment Committee to ensure the Corporation's environmental activities reflect the interests of the people of Ontario.

Hydro also developed new "Standards and Targets for Paper." With purchases of 1,000 tonnes of paper and paper products a year, Hydro now has a policy that all publications are to be produced on recycled paper. Other standards promote paper recycling and double-sided photocopying. These standards translate into a savings of 30,000 trees cut each year or 60 hectares of forest.

Phase I of the Municipal and Industrial Strategy for Abatement (MISA) to eliminate the discharge of toxic substances into water bodies was completed, in conjunction with



*With the help of Hydro's Street-Smart Streetlighting conversion program, communities across Ontario were able to install energy-efficient streetlighting that will reduce their electricity costs and help them save energy.*



*Supporting the development of alternative energy helps Hydro invest in Ontario's future. Emerging solar energy technologies using photovoltaic panels to harness the sun's energy, will provide new sources of power to meet our requirements in the years ahead.*

the Ministry of the Environment. Water samples were taken from Hydro's hydroelectric, fossil and nuclear generating stations for analysis. The results will be considered by the Ministry of the Environment in setting future pollution limits on all station effluents.

Ontario Hydro continued to reduce acid gas emissions from its fossil generating stations in 1991. Flue gas conditioning systems installed at Lambton and Nanticoke stations in 1990 were improved to allow them to burn low sulphur coal without affecting ash particle collection from existing stack gases. Acid gas emissions were 40 per cent lower than in 1989 before flue gas conditioning systems were installed and were 21 per cent below the regulatory limit. The reductions were due to the station improvements, reduced demand for electricity and increased nuclear generation.

The Corporation also received Ministry of the Environment approval to construct scrubbers at Lambton fossil generating station to remove sulphur dioxide from gases produced when coal is burned. In addition to further reducing acid gas emissions, the process leaves a gypsum by-product residue which can be sold as a construction material. Scrubbers for Lambton's first two units are expected to be in service in 1994.

At Nanticoke generating station, the conversion of the wet fly ash disposal system to a dry system, started in 1990, proceeded on schedule. The new system's superior environmental technology will allow Hydro to recycle greater amounts of coal ash into by-products for use in construction and cement manufacture.

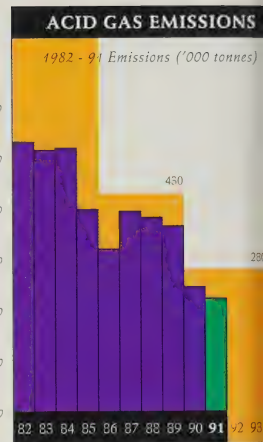
Hydro is a member of the Great Lakes Regional Corporate Environmental Council (GLRCEC). GLRCEC is a unique association of U.S. and Canadian industries and environmental organizations. In 1991 Ontario Hydro participated in the development of a plan, and the release of a report, outlining actions that could be taken by consumers and corporations to save energy and reduce pollution.

### Health and Safety

Ontario Hydro had one workplace fatality during the year, compared with six work-related deaths in 1990. Improving Hydro's safety record is vital and the Corporation is working hard to eliminate employee fatalities completely.

Greater safety in the workplace is a priority. In 1991, the Corporation worked with Hydro's labour organizations to improve health and safety awareness and conditions in the workplace.

Ontario Hydro, CUPE Local 1000 and the Society of Ontario Hydro Professional and Administrative Employees jointly developed a certification package to train safety committee members to halt any unsafe work practices in any Ontario Hydro workplace. Training courses, which exceed current legal certification requirements, will start in 1992.



● Acid Gas Regulation Limits



*Zebra mussels are a growing problem for Hydro's Great Lakes and St. Lawrence generating stations. Research to develop non-chlorine based treatments to control the mollusc population continued in 1991*

Initiatives were also taken to promote public safety. Through our public safety program, Hydro worked with a number of outside groups to improve public health and safety. Multidisciplinary studies examining possible adverse effects of exposure to electric and magnetic fields from power lines are being co-ordinated through a network of public utilities, safety associations and universities.

Also, Hydro continues to work with police, fire departments and educational groups to increase awareness of accidents with electricity and other public safety issues.

### **New Business Ventures**

In 1991, Ontario Hydro was awarded 76 new contracts to provide technology and expertise in over 25 countries worldwide, earning revenues of \$49.9 million and a net income of \$5.6 million. The new contracts involved almost \$3 million of related business with Canadian consultants, manufacturers and suppliers in support of Canadian companies. Licenses for six technology products were granted to Ontario businesses in 1991.

Hydro also provided 80 per cent of the world supply of Cobalt 60, a radioactive isotope used in the treatment of cancer, sterilization of medical supplies and the processing of toxic wastes.

### **Aboriginal Relations**

Ontario Hydro's Board of Directors placed increased emphasis on the Corporation's relationship with Ontario's Aboriginal communities with the formation of the Aboriginal and Northern Affairs Committee. The Committee will review Hydro's policies and programs as they relate to Aboriginal and northern peoples to ensure Hydro activities are in line with the best interests of these communities. In addition, a new Aboriginal and Northern Affairs branch was created to foster an atmosphere which allows Aboriginal and northern communities to participate in Hydro decisions which affect them.

In 1991, Ontario Hydro suspended planning for six new hydroelectric generating stations on the Moose and Abitibi rivers until a co-planning studies process related to Hydro developments in the region is endorsed by the affected Aboriginal groups.

Hydro expanded its electrical service network to 22 remote communities with the opening of the Kingfisher Lake diesel generating station 500 kilometres north of Thunder Bay. Hydro staff also conducted electrical safety and energy management programs throughout the region's First Nations communities.

Ontario Hydro arranged for Aboriginal communities affected by the Ontario-Manitoba Interconnection project and the 500 kilovolt transmission system expansion north of Sudbury to participate in environmental assessment studies of these proposals. Agreements to do this were negotiated with the Wabun Tribal Council and the Chiefs of the Robinson-Superior Area.



*Improving standards of health and safety in the workplace is everybody's business. Hydro is working with our employees and labour organizations to increase awareness and promote safe working practices.*



*Ontario Hydro is working with Ontario's Aboriginals to understand their needs, encourage greater communication and ensure that our decisions reflect their best interests.*



Ontario's electricity needs are largely met by power generated from nuclear, fossil fuel and hydroelectric energy sources.

In 1991, Ontario Hydro's nuclear generating stations supplied 50.8 per cent of total system energy, including production for secondary sales, compared to 43.3 per cent in 1990. Fossil-fuelled generation contributed 21.6 per cent, up from 20.0 per cent last year, and hydroelectric stations supplied 24.4 per cent, down from 26.7 per cent in 1990. Hydro purchased 1.7 per cent of its total energy from other provinces and the United States. Ontario-based non-utility generation purchases amounted to 1.5 per cent, four times the 1990 amount.

### Nuclear Generation

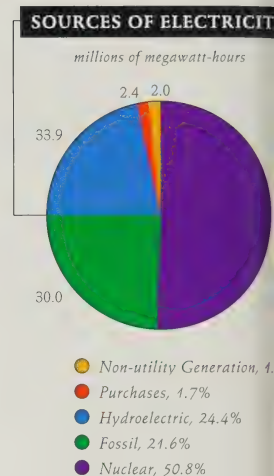
Energy production at Hydro's nuclear generating stations for 1991 totalled almost 71 million megawatt-hours, an increase of 19 per cent over 1990. The Corporation's overall nuclear capability factor—indicating level of operating performance—for the year was 69.2 per cent, compared to 62.3 per cent in 1990.

The newer four-unit Pickering "B" and Bruce "B" generating stations continued to operate well, with a combined capability factor of 89 per cent. At the corresponding point in their life cycles, they are outperforming the older "A" stations by 7 per cent.

The reactor in Pickering "A" Unit 3 was retubed, and the unit rehabilitated, in 26 months. It was returned to service in August, significantly reducing outage time needed to retube Units 1 and 2. This is largely due to the team's continuous quality improvements and experience gained from earlier work.

Retubing work on Pickering "A" Unit 4 began in August and is expected to be completed within 19 months. The replacement of pressure tubes and additional rehabilitation work will ensure the continued safe and reliable operation of these units. In May, Ontario Hydro committed \$854 million over the next eight years to a major rehabilitation project for Bruce "A" nuclear generating station. When complete, the station is targeted to operate at 85 per cent capability for the remainder of its service life, to 2018.

At the Darlington generating station, Unit 1 was being commissioned when it was shut down in March 1991 to carry out tests for potential fuel bundle damage. Unit 1 was restarted in December 1991 and reached full power in January 1992 before being shutdown for further inspection. Unit 1 is expected to be declared in-service in the second half of 1992. Units 3 and 4 are planned to be in-service in 1992 and 1993 respectively. Darlington Unit 2 was shutdown in January 1991 after an investigation in December 1990 revealed damage to some of the fuel bundles. Although the investigation is not complete, Unit 2 is expected to be returned to service in the second half of 1992.



*Water samples are being taken from Hydro's hydroelectric, fossil and nuclear generating stations to help the Ministry of the Environment eliminate the discharge of toxic substances into Ontario's water bodies and to set pollution limits for the future.*



## Thermal Generation

In 1991, Ontario Hydro's fossil-fuelled generating stations—Atikokan, Thunder Bay, Lakeview, Lambton, Nanticoke, and Lennox—produced almost 30 million megawatt-hours of electricity, an increase of 9.3 per cent from 1990. The R.L. Hearn plant in Toronto did not generate electricity in 1991 but was used to regulate voltage levels in the Toronto area.

Major rehabilitation programs are in progress at Lakeview and Lambton generating stations to replace aging equipment, improve performance and extend service life.

At Lakeview, upgrading work on the precipitator in Unit 5 was completed. Flue gas conditioning equipment, for use while burning low-sulphur coal, was installed with good results. Rehabilitation of Unit 6 is scheduled for completion in early 1992, and work currently under way on Units 1 and 2 should be completed in late 1992.

Rehabilitation efforts are also proceeding at Lambton generating station to ensure a reliable electricity supply until 2015. Work is scheduled to begin on Unit 3 in March 1992, with full station rehabilitation expected by 1996.

At Nanticoke, a life management program to monitor and replace equipment as necessary was approved in 1991. Work proceeded on converting the wet fly ash system to a dry system. Four ash transfer buildings were erected, architectural work was completed and the installation of system equipment is proceeding.

An asbestos removal program was completed at the R.L. Hearn generating station in 1991. One of the largest projects of its kind undertaken in North America, Ontario Hydro received numerous inquiries from other Canadian utilities about the program.

## Hydroelectric Generation

Ontario Hydro's hydroelectric generating stations produced almost 34 million megawatt-hours of energy in 1991, a decrease of 7.3 per cent from 1990 due to lower water levels. At yearend, installed capacity was 7,183 megawatts, including two megawatts that were added as a result of the hydroelectric generating unit upgrading program and 56 megawatts from the Smoky Falls generating station. Total hydroelectric capacity increased by 58 megawatts, or 0.8 per cent over 1990.

Construction work started on the redevelopment of the Big Chute generating station on the Severn River. When completed, it will add up to nine megawatts of capacity to the system.



*Hydro employees discuss the life management process for fossil generating stations. This process preserves existing facilities by continually monitoring conditions and replacing equipment when necessary.*



*The Smoky Falls Generating Station, near Kapuskasing increases Hydro's hydroelectric capacity by 56 megawatts*

A computer-based system was developed to analyze the most efficient use of water in units at the R.H. Saunders generating station. This system automatically adjusts each generating unit to select the most efficient means of operating. A field prototype will be installed in 1992, and should enable the Saunders station to provide an additional 12,000 megawatt-hours of energy annually.

An Environmental Assessment of the Niagara River Hydroelectric Development (Sir Adam Beck 3) was submitted to the Ontario government for review in 1991. Also, the Mattagami River and Little Jackfish projects, submitted to the Ontario government in 1990, are currently under review.

### Non-Utility Generation

In 1991, independent power producers sold about two million megawatt-hours of energy to the Corporation. Ten new non-utility generation projects, totalling 153 megawatts, went into operation, and a further 16 facilities were under construction. When these projects are operating, a total of 78 non-utility generators will contribute 751 megawatts of capacity to the Hydro system. An additional five projects totalling 666 megawatts were approved but not contracted by the Corporation.

In December, Ontario Hydro notified non-utility generators that a temporary freeze was being placed on the non-utility generation program and that only small local projects of five megawatts or less would be considered for approval. Ontario Hydro put this hold on the program in light of the decreasing need for additional energy supply for the rest of the 1990s.

After a review of the program Hydro reopened discussions in February 1992 with the principals of the 13 non-utility projects (all over 5 megawatts) affected by the freeze. Ontario Hydro will work with these 13 projects to delay in-service dates, meet new energy efficiency guidelines and address operational concerns.

Hydroelectric projects over five megawatts will continue to be accepted by the Corporation as these involve a formal site development approval process and are expected to make only a small but needed contribution to local supply.

### Transmission

Hydro continued to expand its transmission and distribution system in 1991. The final phase of the Southwestern Ontario Transmission System was completed with a 500 kilovolt line connecting the Nanticoke generating station to the Longwood transformer station.



*Developing Ontario's hydroelectric potential is part of Hydro's plan to meet our future energy needs. The Sir Adam Beck 3 station, proposed under the Niagara River Hydroelectric Development project, will increase power supplies.*



*The 500 kilovolt transmission system was completed in southwestern Ontario, improving reliability and upgrading interconnections with other utilities.*

The new facilities will supply power from the Bruce Nuclear Power Development to the bulk electricity system, improving reliability to southwestern Ontario and upgrading Hydro's interconnections with other utilities.

To enable Hydro to supply additional power to Ontario's more heavily populated and industrialized centres, new transmission facilities have been planned for the area between Sudbury and Toronto. Environmental and technical feasibility studies were conducted for these new transmission facilities in 1991.

Hydro also developed an energy-saving pilot project aimed at reducing losses in the distribution system. The project involved modifications to transmission equipment from distribution stations and may result in an additional 100 megawatts of customer supply without any new generation.

Significant savings were also achieved by standardizing equipment used in overhead distribution systems, reducing costs by up to \$30 million annually.

Videotaping of all 115, 230 and 500 kilovolt transmission lines was concluded in 1991. When completed in 1992, the project will provide a complete visual inventory of lines on a laser-disc system and establish a more effective work planning tool. Significant progress was also made in the development and use of new microprocessor technology to improve transmission system performance.

### **Continuous Quality Improvement**

Ontario Hydro expanded its Continuous Quality Improvement (CQI) programs, introduced in 1990, to encourage employee teamwork, improve productivity and to better meet customer needs.

In 1991, hundreds of CQI teams across the Corporation launched initiatives that resulted in significant gains in productivity, performance and safety in Hydro's opera-tions, and better management and staff relations.



*Videotaping all 115, 230 and 500 kilovolt lines will provide a visual inventory of lines on a laser disc system to help Hydro maintain our transmission system, reduce power losses and improve reliability.*

Ontario Hydro continued to promote a greater sense of partnership among its employee representatives for a more co-operative approach to solving labour problems. As a result, improved staff relations have increased Hydro's productivity.

In December, Ontario Hydro and CUPE Local 1000 agreed on a process to determine the use of contract services. The agreement, which gives management and union representatives joint decision-making responsibility, is expected to be implemented in early 1992.

Ontario Hydro also adopted a decentralized approach to implement Continuous Quality Improvement programs (CQI). To ensure uniform interaction with union representatives across the organization, Hydro and CUPE Local 1000 jointly established fundamental binding principles for all CQI teams. The new approach was also adopted for the 1992 Collective Agreement negotiations.

### Employment Equity

Ontario Hydro continued to promote employment equity in the Corporation in 1991. A full-time employment equity specialist for Aboriginal affairs was hired to improve Hydro's relations with Aboriginal communities, and to focus on Aboriginal employment issues.

Ontario Hydro marked the second anniversary of the 1989 Montreal massacre by announcing a joint venture with the Ontario Women's Directorate to develop an employee awareness program about violence against women.

Hydro also completed implementation of our pay equity plans for union and management employees in 1991. The pay equity plan covering CUPE employees, which pays men and women the same wage for work of equal or comparable value, covers nearly 19,000 CUPE employees in clerical, technical, operating and maintenance trades positions. Approximately 16 per cent of these employees received pay equity adjustments. The average adjustment for 1991 was \$1.70 per hour at a total cost to the Corporation of \$8.3 million.

The Ontario Hydro management pay equity plan, covering all non-union staff, involves about 9,000 employees, 164 of which received pay equity adjustments. The 1991 average adjustment for staff in the plan was \$1.50 per hour at a cost of \$462,800.

### Corporate Awards

Ontario Hydro's highest employee honour, the Sir Adam Beck award, was given to Larry Prevost in 1991 for his outstanding contribution to the Sarnia community and Ontario Hydro. The award is presented by the Chair and the President.

Also, Ontario Hydro presented 22 employees with New Technology Awards for staff-developed technologies saving Hydro \$59.2 million over five years. In addition, cost savings of \$4.9 million were achieved over the same period through Ontario Hydro's employee suggestion program.



*Ontario Hydro employees across the province raised \$1,340,000 for the 1991 United Way campaign, up 14 per cent from 1990.*



*The 1991 Sir Adam Beck Award was presented to Larry Prevost for his outstanding contribution. Ontario Hydro's highest honour, the award is given annually in recognition of outstanding achievement by an employee.*

## FINANCIAL HIGHLIGHTS

1991 marked another year of challenge for Ontario Hydro as the Corporation continued to respond to unfavourable economic and operating conditions brought on by the recession, cost pressures, and the need to improve generation performance. As a result of these factors, financial performance for the year fell short of expectations, although 1991 net income improved over 1990.

Total revenues for the year were \$7,143 million, an increase of \$659 million over 1990. The higher revenue resulted mainly from an average 8.6 per cent increase in the price of electricity. The recession, however, continued to affect demand for electricity in Ontario, limiting growth in 1991 to 1.2 per cent over 1990. This followed a decline of 3.5 per cent in the previous year.

Total operating costs for 1991, including financing charges, amounted to \$6,939 million, a \$584 million increase over 1990. The rise in operating costs was due primarily to a full year's impact of the higher financing and depreciation costs associated with Darlington Unit 2, which was placed in service in October of 1990, and higher program costs for maintenance and restoration activities.

Net income for 1991 was \$204 million, compared to \$129 million for 1990, an increase of \$75 million.

Capital expenditures for investment in fixed assets during 1991 amounted to \$3,934 million, a \$390 million increase over 1990, reflecting continuing construction on the remaining three nuclear units at the Darlington generating station and rehabilitation of generation, transmission and distribution facilities.

Cash provided from operations and available for investment in fixed assets increased to \$1,381 million in 1991 from \$754 million in 1990. Proceeds from bonds issued by Ontario Hydro amounted to \$5,787 million, of which 72.9 per cent or \$4,220 million was raised through four global Canadian dollar issues. After repayment of outstanding debt, net borrowing amounted to \$2,743 million.

## RESULTS OF OPERATIONS

### Revenues

Primary revenues for 1991 amounted to \$7,081 million, an increase of 9.6 per cent or \$619 million over 1990, due mainly to an average 8.6 per cent increase in the price of electricity in 1991.

Electricity sales to Hydro's three classes of primary customers—municipal utilities, rural retail customers and direct industrial customers—totalled 130,964 million kilowatt-hours, a 0.1 per cent increase over 1990. A 1.6 per cent increase in the volume of electricity sales to municipal customers was substantially offset by a decline in the volume of sales to rural retail customers and direct industrial customers, due to the impact of the recession.

Secondary revenues from the sale of surplus energy to power systems outside of Ontario, mainly to United States utilities, came to \$62 million in 1991. Compared with 1990, this represents an increase of \$40 million, due to higher





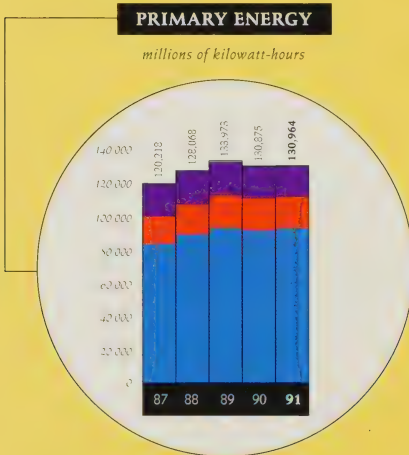
availability of energy from nuclear generation. The higher level of secondary sales helped to reduce the cost of electricity charged to customers in Ontario and has not compromised Hydro's ability to meet its acid gas emission limits for the year. In 1990, export sales were constrained to ensure Ontario Hydro's acid gas emissions were below the limit specified by provincial government regulation.

### Total Operating Costs

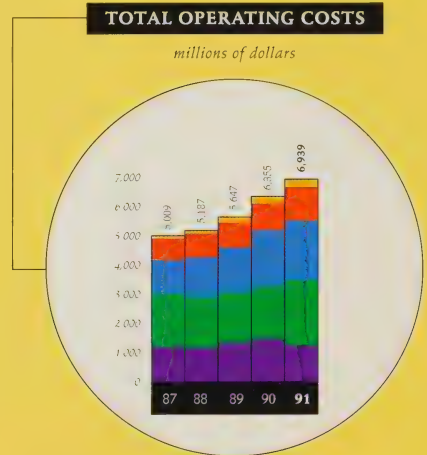
Ontario Hydro's total operating costs for 1991 were \$6,939 million, \$584 million higher than in 1990. A significant portion of this increase, about \$320 million, was due to a full year's impact of the costs associated with Darlington Unit 2, which was declared in service in October 1990. As each new generating unit is placed in service, the associated financing, depreciation and operation, maintenance and administration costs are charged to operations. In addition, Hydro continued to maintain and restore its aging generation and transmission facilities to ensure continued long-term reliability, further increasing operating costs.

### Operation, Maintenance and Administration

In 1991, operation, maintenance and administration costs amounted to \$2,037 million, an increase of \$110 million or 5.7 per cent over 1990. This increase was due primarily to the higher initial operating costs associated with adding Darlington unit 2 to the power system, and higher program costs for maintenance and restoration activities. The benefits from the Darlington unit over its life include lower fuelling costs and reduced reliance on more costly supply alternatives. Generation performance, in particular performance related to Hydro's older nuclear generating units, has declined in recent years but increased restoration activities are beginning to result in improvement. In 1991, expenditures for energy management programs approximated \$179 million, of which \$88 million was capitalized and \$91 million was charged to operations. In 1990, approximately \$103 million was spent on energy management programs, of which \$9 million was capitalized and \$94 million was charged to operations. A number of energy management programs and services were provided to customers to help them use electricity more wisely. These initiatives will help to postpone the need to build new generating facilities and contribute to helping customers get the best value from their energy use.



- Direct
- Rural
- Municipal



- Provincial government levies
- Depreciation
- Operation, maintenance and administration
- Financing charges
- Fuel and fuel related

### ***Fuel and Fuel Related Costs***

In 1991, fuel and the related costs of power purchases and the Nuclear Agreement-Payback, were 15.0 per cent lower than in 1990.

The 1991 fuel costs for coal, uranium, oil and water rental payments other than to the Province of Ontario came to \$1,128 million, \$93 million higher than in 1990, reflecting greater electricity generation. In 1991, Ontario Hydro cancelled its long-term uranium supply contracts with Denison Mines Limited and Rio Algom Limited. Since the contracts were entered into in the late 1970s, the world market price for uranium has fallen significantly. The decision to restructure the uranium supply program was undertaken to reduce Ontario Hydro's electricity rates in future years as the lower costs associated with future uranium purchases will more than offset the costs associated with cancelling the contracts.

In 1991, Ontario Hydro purchased \$151 million of electricity, \$89 million from independent power producers located in Ontario and \$62 million from neighbouring utilities. Hydro's need to purchase power has decreased \$326 million from 1990, due to higher nuclear generation in the year. The Corporation is, however, still a net importer of electricity, a trend which started in 1989. Hydro buys electricity when it is economical to do so and during periods of peak demand or in emergencies. Purchases are also used to manage acid gas emission levels. The provincial regulatory limit on acid gas emissions for 1991 was 280,000 tonnes, down from 430,000 tonnes two years ago. The Corporation's acid gas emissions for the year were estimated at 222,000 tonnes, well within the regulatory limit.

### ***Provincial Government Levies***

Provincial government levies are payments made to the Province of Ontario with respect to the debt guarantee fee and water rentals.

Ontario Hydro is required to pay to the Province an annual debt guarantee fee of one half of one per cent on the total debt guaranteed by the Province outstanding on the preceding December 31. The fee for 1991 is \$147 million, up \$14 million from 1990.

Provincial water rental payments, related to the use of provincial waters by Ontario Hydro in the operation of its hydroelectric stations, amounted to \$105 million in 1991, an increase of \$3 million over 1990. The increased payments reflect the impact of higher water rental rates partially offset by a decrease in hydroelectric generation.

In addition to provincial government levies, Ontario Hydro, similar to other businesses, also made payments of approximately \$249 million to various government agencies in 1991. This amount includes payments in lieu of taxes to municipalities, provincial sales taxes, Unemployment Insurance Commission premiums, Canada Pension Plan contributions and Employer Health Tax payments.

### ***Depreciation***

Depreciation charged to operations totalled \$1,136 million in 1991, an increase of \$228 million or 25.1 per cent over 1990. The increase reflects the depreciation costs for new generating facilities, primarily Darlington Unit 2, and an increase in the charges for fixed asset and other removal costs, including decommissioning costs.

### ***Financing Charges***

Financing charges comprise interest charged to operations and foreign exchange costs. Interest charged to operations represents gross interest reduced by capitalized interest and interest earned on investments. By capitalizing interest related to assets under construction until the assets are placed in service, Hydro equitably allocates costs between current and future customers. Foreign exchange costs mainly represent the amortization of gains or losses on the principal amount of foreign debt.

Gross interest costs for 1991 amounted to \$3,583 million, an increase of \$379 million or 11.8 per cent over 1990. This increase is primarily related to additional funds borrowed during the year to help finance construction programs. The increase was partially offset by the favourable impact of the relatively stronger Canadian dollar on United States interest payments and the refinancing of matured debt at lower interest rates.

Interest charged to operations rose to \$2,234 million in 1991, \$431 million or 23.9 per cent higher than in 1990. The increase was primarily due to interest charged to operations on debt related to Darlington Unit 2, which was declared in service in October 1990, and new facilities placed in service during 1991.

**Net Income**

Ontario Hydro had planned a relatively low level of net income for 1991 so as to moderate the increase in electricity prices, and had planned for a withdrawal from the reserve for stabilization of rates and contingencies to meet the statutory appropriation for debt retirement. Net income for 1991 came to \$204 million, an increase of \$75 million over the 1990 level of \$129 million, but still falling short of plans.

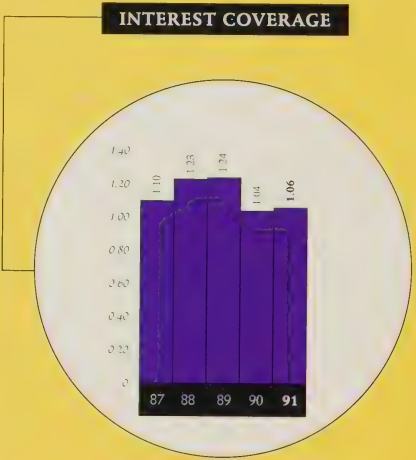
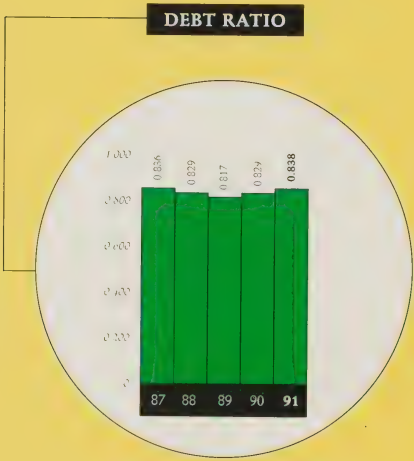
The appropriation for debt retirement in 1991 was \$416 million and the withdrawal from the reserve for stabilization of rates and contingencies was \$212 million. In 1990, the amounts were \$374 million and \$245 million, respectively. Ontario Hydro's total equity increased by the year's net income to total \$6.6 billion at the end of 1991.

**Financial Indicators**

The Power Corporation Act requires Ontario Hydro to include in its rates an appropriation for the retirement of debt. The Act also enables the Corporation to include in rates an amount to contribute to a reserve for the stabilization of rates and contingencies. Together, these amounts build equity for the Corporation enabling it to operate as a financially self-sustaining entity. The Corporation's financial performance is monitored using two main indicators: interest coverage ratio and debt ratio.

The level of interest coverage measures the extent to which net income contributes toward Hydro's ability to meet its gross interest payments. An increase in the interest coverage ratio indicates a strengthening in the Corporation's financial position. The level of interest coverage increased to 1.06 in 1991 from 1.04 in 1990, due mainly to the increase in net income.

The debt ratio measures the extent to which Hydro's assets are financed by debt. A reduction in the debt ratio



indicates a strengthening in financial position, as a relative increase in equity provides additional financial flexibility. The debt ratio at the end of 1991 was 0.838 compared to the 1990 ratio of 0.829, due mainly to the net increase in long-term debt used to help finance investment in fixed assets.

CAPITAL EXPENDITURES AND FINANCING

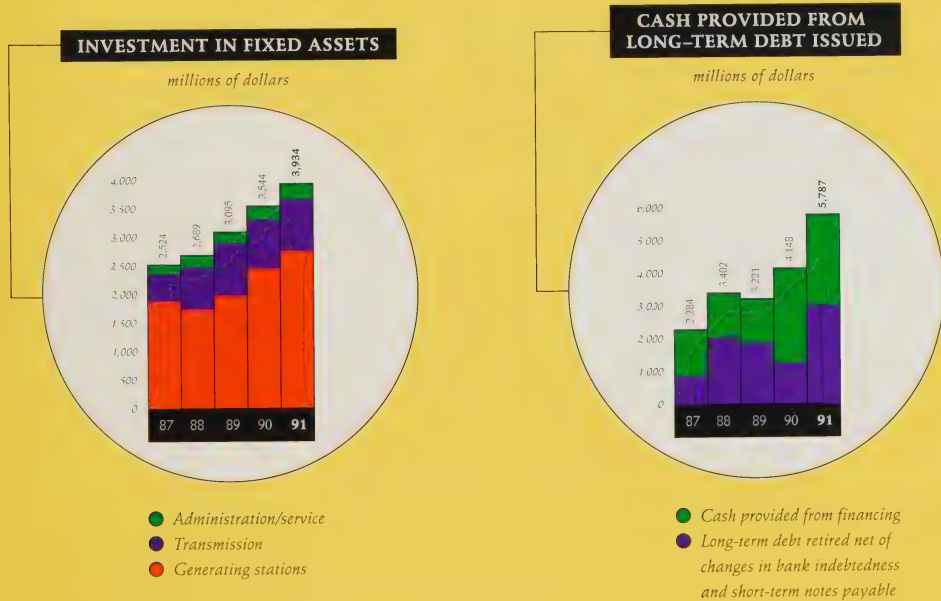
Investment in Fixed Assets

Ontario Hydro invests in fixed assets to meet expected growth in the demand for electricity and to meet regulatory requirements. The total assets of the Corporation at the end of 1991 were \$43,244 million, 88.3 per cent of which represented fixed assets in service or under construction. This relatively high percentage reflects the capital intensive nature of Ontario Hydro's business.

The investment in fixed assets during 1991 totalled \$3,934 million. Of this amount, \$1,223 million was spent on construction of Darlington Units 1 and 3 which are expected to be placed in service in the second half of 1992, and Unit 4 which is expected to be placed in service in 1993. In addition, the 1991 expenditures reflect continued emphasis on investment in the transmission and distribution facilities to maintain a high level of service and reliability. During 1991, \$917 million was invested in constructing major transmission and distribution facilities, such as the 500 kilovolt transmission lines in southwestern Ontario. In addition, \$203 million was spent on rehabilitation of Lambton and Lakeview fossil generating stations.

Financing and Capital Markets

The cash required by Ontario Hydro to finance its investment in fixed assets comes from two major sources: operations and external financing through borrowing. For 1991, operations provided \$1,381 million and cash provided from financing was \$2,748 million. The cash provided from operations was \$627 million higher than 1990, reflecting a higher net income and a net decrease in working capital. Cash provided from financing consists of cash from issuing long-term debt and the change in bank indebtedness and short-term notes payable, less the amount of cash used to retire long-term debt.





Proceeds of \$5,787 million from bonds issued by Ontario Hydro during 1991 were used for capital expenditures and refinancing maturing debt. Ontario Hydro continued with its initiative to diversify its access to major capital markets. In 1991, Hydro successfully undertook four global Canadian dollar issues, including the first 30-year international Canadian bond issue and a 40-year serial zero coupon bond issue. In addition, issues were undertaken in the Eurodollar and Swiss Franc markets. All foreign currency denominated issues undertaken in 1991 were fully hedged into Canadian dollars. The issues had an average interest rate of 10.3 per cent for an average term to maturity of 18 years. In 1990, proceeds from bonds issued amounted to \$4,148 million, resulting from 12 Canadian dollar issues and one U.S. dollar issue which was fully hedged into Canadian dollars.

Cash amounting to \$1,650 million was used to retire maturing long-term debt in 1991, compared with \$1,633 million in 1990. In addition, during 1991, cash amounting to \$1,394 million was used to redeem debt prior to maturity. In 1990, no debt was redeemed prior to maturity. Net borrowing for 1991, after the retirement and redemption of long-term debt, amounted to \$2,743 million compared with \$2,515 million in 1990.

## OUTLOOK

Over the next few years, Ontario Hydro's revenues are expected to increase as a result of the forecast growth in electricity demand and rate increases. Hydro's current forecast indicates that the demand for electricity is expected to increase at a modest rate as the Ontario economy recovers from the recession. Electricity price increases are expected to be significantly higher than the rate of inflation, despite Hydro's efforts to moderate such price increases.

Major cost pressures affecting electricity rates include the impact of bringing the remaining three Darlington generating units into operation during a period of modest increase in the demand for electricity. Although placing these units in service will initially increase total operating costs by a significant amount, long-term benefits will result from lower fuelling costs. In addition, greater emphasis will be placed on improving the performance of aging generation and transmission facilities. Restoration programs are now underway and improvements in operating performance are expected with the completion of the various projects. Hydro also has an ambitious long-term energy management program and expects to increase its efforts in this area over the next few years. The energy management program will provide benefits in the longer term to Hydro's customers and the environment. Such benefits include postponing the need to build new generating facilities. In the near-term, however, some additional expenditures will have to be incurred.

Investment in fixed assets is expected to remain at a high level reflecting construction activities associated with generation, transmission and rehabilitation projects. The Corporation has embarked on a major rehabilitation program to improve the reliability and efficiency of its existing system. In some cases, these projects will extend the service lives of the facilities.

Hydro's planned borrowing is forecast to decrease over the next few years from the relatively high level in 1991. Near-term capital market conditions are expected to be less favourable than the past year, reflecting an anticipated increase in the competition for funds. The Corporation plans to further develop its access to the domestic and international capital markets.

The programs to improve operating performance, combined with the forecast recovery in the Ontario economy, is expected to lead to an improvement in Hydro's overall financial performance over the next few years.



## MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL REPORTING

The accompanying financial statements of Ontario Hydro are the responsibility of management and have been prepared in accordance with accounting principles generally accepted in Canada, applied on a basis consistent with that of the preceding year. The significant accounting policies followed by Ontario Hydro are described in the Summary of Significant Accounting Policies. The preparation of financial statements necessarily involves the use of estimates based on management's judgement, particularly when transactions affecting the current accounting period cannot be finalized with certainty until future periods. The financial statements have been properly prepared within reasonable limits of materiality and in light of information available up to March 9, 1992. The information presented elsewhere in the Annual Report is consistent with that in the financial statements.

Management maintains a system of internal controls designed to provide reasonable assurance that the assets are safeguarded and that reliable financial information is available on a timely basis. The system includes formal policies and procedures and an organizational structure that provides for appropriate delegation of authority and segregation of responsibilities. An internal audit function independently evaluates the effectiveness of these internal controls on an ongoing basis and reports its findings to management and the Audit Committee of the Board of Directors.

The financial statements have been examined by Ernst & Young, independent external auditors appointed by the Lieutenant-Governor-in-Council of Ontario. The external auditors' responsibility is to express their opinion on whether the financial statements are fairly presented in accordance with generally accepted accounting principles. The Auditors' Report, which appears below, outlines the scope of their examination and their opinion.

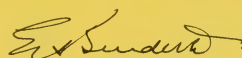
The Board of Directors, through the Audit Committee, is responsible for ensuring that management fulfills its responsibilities for financial reporting and internal controls. The Audit Committee meets periodically with management, the internal auditors and the external auditors to satisfy itself that each group has properly discharged its respective responsibility, and to review the financial statements before recommending approval by the Board of Directors. The external auditors have direct and full access to the Audit Committee, with and without the presence of management, to discuss their audit and their findings as to the integrity of Ontario Hydro's financial reporting and the effectiveness of the system of internal controls.

On behalf of Management,



Chair

Toronto, Canada,  
March 9, 1992



Senior Vice-President, Finance

## AUDITORS' REPORT

### To the Board of Directors of Ontario Hydro:

We have audited the statement of financial position of Ontario Hydro as at December 31, 1991 and the statements of operations, accumulated debt retirement appropriations, reserve for stabilization of rates and contingencies and source of cash used for investment in fixed assets for the year then ended. These financial statements are the responsibility of Ontario Hydro's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of Ontario Hydro as at December 31, 1991 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles.

Toronto, Canada,  
March 9, 1992



Chartered Accountants

## FINANCIAL STATEMENTS

### SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying financial statements have been prepared in accordance with accounting principles generally accepted in Canada, applied on a basis consistent with that of the preceding year. The significant accounting policies followed by Ontario Hydro are described below.

#### **Rate setting**

Ontario Hydro has broad powers to generate, supply and deliver electric power throughout the Province of Ontario. The Corporation operates under the Power Corporation Act and is subject to provisions of the Ontario Energy Board Act.

Under the provisions of the Power Corporation Act, the price payable by municipal corporations is the cost of operating and maintaining the system, depreciation, interest, and the amounts appropriated for debt retirement and stabilization of rates and contingencies. The debt retirement appropriation is the amount required under the Act to accumulate on a sinking fund basis over 40 years a sum equal to the debt incurred for the cost of the fixed assets in service. The appropriation for, or withdrawal from, the stabilization of rates and contingencies reserve is an amount established to maintain a sound financial position and to stabilize the effect of cost fluctuations.

Under the provisions of the Ontario Energy Board Act, a public hearing before the Ontario Energy Board is required to review any changes in electricity rates proposed by Ontario Hydro which affect its municipal utilities, direct industrial customers, or, if the Minister of Energy so directs, rural retail customers. The Ontario Energy Board then submits its recommendations to the Minister of Energy. After considering the recommendations of the Ontario Energy Board, Ontario Hydro's Board of Directors, under the authority of the Power Corporation Act, establishes the electricity rates to be charged to customers.

If the Board of Directors specifies an amount related to a certain transaction be included in future electricity rates that, in accordance with the accounting policies summarized below, would be charged or credited to operations in the current year, then this amount is deferred and amortized to future operations on a basis consistent with its inclusion in rates.

#### **Fixed assets**

Fixed assets in service include operating facilities and non-operating reserve facilities. Construction in progress includes fixed assets under construction and heavy water held for use in nuclear generating stations under construction.

Fixed assets are capitalized at cost which comprises material, labour, engineering costs, overheads, depreciation on service equipment, interest applicable to capital construction activities, and for new facilities, the costs of training initial operating staff. In the case of generating facilities, the cost also includes the net cost of commissioning which comprises the cost of start-up less the value attributed to energy produced by generation facilities during their commissioning period. For multi-unit facilities, a proportionate share of the cost of common facilities is placed in service with each major operating unit. The cost of heavy water comprises the direct cost of production and applicable overheads, as well as interest and depreciation on the heavy water production facilities and the estimated removal costs of these facilities. Leases which transfer the benefits and risks of ownership of assets to Ontario Hydro are capitalized.

Interest is capitalized on construction in progress at rates (1991: 10.8 per cent, 1990: 10.8 per cent) which approximate the average cost of long-term funds borrowed in the years in which expenditures have been made for fixed assets under construction. If the construction period of a project is extended and the construction activities are continued, interest is capitalized during the period of extension provided that the project has a reasonable expectation of being completed.

If a project is cancelled or deferred indefinitely with a low probability of resuming construction, all costs, including the costs of cancellation, are written off to operations.

If fixed assets are removed from operations and mothballed for future use, termed non-operating reserve facilities, the costs of mothballing are charged to operations.

#### **Depreciation**

The capital costs of fixed assets in service are depreciated on a straight-line basis. Depreciation rates for the various classes of assets are based on their estimated service lives. Major components of fossil and nuclear generating stations are depreciated over the lesser of the service life expectancy of the major components or the remaining service life of the associated generating station; for hydroelectric generating stations, major components are depreciated over the service life expectancy of the component, ranging from 15 to 100 years. The estimated service lives of assets in the major classes are:

Generating stations – fossil	40 years
– nuclear	40 years
Heavy water	over the period ending in the year 2040
Transmission and distribution facilities	15 to 60 years
Heavy water production facilities	20 years
Administration and service facilities	5 to 65 years

In accordance with group depreciation practices, for normal retirements the cost of fixed assets retired is charged to accumulated depreciation with no gain or loss reflected in operations. However, gains and losses on sales of fixed assets and losses on premature retirements are charged to operations in the year incurred as adjustments to depreciation expense.

When the costs of removal less residual value, termed removal costs, on retirements of fixed assets can reasonably be estimated and are significant, provisions for these costs, except for those related to heavy water production facilities, are charged to depreciation expense on an annuity basis over the remaining service life of the related fixed assets. For heavy water production facilities, provisions for removal costs are charged to heavy water production costs on a straight-line basis over the remaining service life of the related facilities. Removal costs that are provided for include the estimated costs of decommissioning nuclear and fossil stations and heavy water production facilities, and the estimated costs of removing certain nuclear reactor fuel channels. Other removal costs are charged to depreciation expense as incurred.

The estimated service lives of fixed assets and the significant assumptions underlying the estimates of fixed asset removal costs are subject to periodic review. Any changes arising out of such a review are implemented on a remaining service life basis from the year the changes can first be reflected in electricity prices.

Non-operating reserve facilities are amortized so that any estimated loss in value is charged to depreciation expense on a straight-line basis over their expected non-operating period.

### **Unamortized advances for fuel supplies**

In prior years, Ontario Hydro made advances under long-term fuel supply contracts for pre-production costs to suppliers in advance of the fuel delivery. These payments and associated costs, including interest, are carried in the accounts as unamortized advances for fuel supplies to the extent that the advances will be offset by future fuel deliveries. The advances are amortized to fuel inventory as the fuel is delivered.

### **Fuel for electric generation**

Fuel used for electric generation comprises the average inventory costs of fuel consumed, the value attributed to commissioning energy produced, and provisions for disposal of nuclear fuel irradiated during the period. The inventory cost of fuel consumed comprises fuel purchases, transportation and handling costs, and the amortization of advances for fuel supplies. Transportation costs include charges for interest and depreciation on railway equipment owned by Ontario Hydro. The value attributed to commissioning energy produced during the period represents the incremental operating and fuel costs of producing the same quantity of energy at generating units displaced because of the commissioning activity. The costs for disposal of nuclear fuel irradiated in each period are charged to operations based on estimated future expenditures and interest accumulating to the estimated date of disposal. Estimates of expenditures, interest and escalation rates, and the date of disposal are subject to periodic review. Adjustments resulting from changes in estimates are charged to operations on an annuity basis over the period from the year the changes can first be reflected in electricity prices to the estimated in-service date of the disposal facility.

### **Foreign currency translation**

Current monetary assets and liabilities in foreign currencies are translated to Canadian currency at yearend rates of exchange and the resultant exchange gains or losses are credited or charged to operations. Long-term debt payable in foreign currencies is translated to Canadian currency at yearend rates of exchange. Resulting unrealized exchange gains or losses are deferred and included in unamortized debt costs, and are amortized to operations on an annuity basis over the remaining life of the related debt.

Foreign exchange gains or losses on hedges of long-term debt payable in foreign currencies are deferred and included in unamortized debt costs. The deferred gains or losses on hedges are amortized to operations in the periods the hedges provide benefit.

Foreign exchange gains or losses on early redemption of long-term debt are deferred and included in unamortized debt costs if the exposure in the foreign currency related to the redeemed debt is not reduced as a result of the refinancing of the redeemed debt in the same currency. These deferred gains or losses are amortized on an annuity basis over the period to the original maturity date of the redeemed debt. If the foreign currency exposure is reduced as a result of the early redemption of debt, the resulting foreign exchange gains or losses related to the redeemed debt are credited or charged to operations.

#### **Unamortized debt costs**

Unamortized debt costs include the unamortized amounts related to unrealized foreign exchange gains or losses resulting from the translation of foreign currency long-term debt; foreign exchange gains or losses on hedges; foreign exchange gains or losses on the early redemption of long-term debt; discounts or premiums arising from the issuance of debt or the acquisition of debt prior to maturity; and discounts or premiums accrued on foreign currency hedges.

Debt discounts or premiums arising from the issuance of debt are amortized over the period to maturity of the debt. Discounts or premiums on debt acquired prior to the date of maturity are amortized over the period from the acquisition date to the original maturity date of the debt. Discounts or premiums on foreign currency hedges related to principal and interest payments are credited or charged to operations over the terms of the individual hedges.

#### **Demand management**

Demand management activities undertaken by Ontario Hydro encourage customers to conserve or use electricity more efficiently. Demand management costs that have reasonably assured and specifically identifiable future benefits to Ontario Hydro are deferred and amortized to operations on a straight-line basis over the periods that benefit. Otherwise, the costs are charged to operations as incurred. The benefit periods of deferred demand management costs are subject to periodic review. Any changes arising out of such a review are implemented on a remaining benefit period basis from the year the changes can first be reflected in electricity prices.

#### **Nuclear agreement-payback**

Ontario Hydro, Atomic Energy of Canada Limited and the Province of Ontario are parties to a joint undertaking for the construction and operation of Units 1 and 2 of Pickering nuclear generating station, with ownership of these units being vested in Ontario Hydro. Contributions to the capital cost by Atomic Energy of Canada Limited and the Province of Ontario amounted to \$258 million and these have been deducted in arriving at the value of fixed assets in service in respect of Pickering Units 1 and 2. Ontario Hydro is required to make monthly payments, termed "payback", until the year 2003 to each of the parties in proportion to their capital contributions. Payback, in a broad sense, represents the net operational advantage of having the power generated by Pickering Units 1 and 2, compared with power generated by coal-fired units similar to Lambton Units 1 and 2.

During the 1983 through 1988 shutdown period for replacement of pressure tubes in Pickering Units 1 and 2, the payback calculations resulted in negative payback amounts. These amounts have been credited against the cost of operations over the shutdown period and the accumulated amounts, plus interest, are included in the accounts as long-term accounts receivable. With the return to operation of the last of the two units, the accumulated negative payback amounts, plus interest, are being offset against positive payback amounts payable over the remaining term of the Agreement to Atomic Energy of Canada Limited and to the Province of Ontario.

#### **Pension plan**

The pension plan is a contributory, defined benefit plan covering all regular employees of Ontario Hydro. Pension costs for accounting purposes are actuarially determined based on the assumptions that reflect management's best estimate of the effect of future events on the actuarial present value of accrued pension benefits, and the valuation of pension plan assets using a five-year market value average. Pension plan surpluses and deficiencies are amortized on an annuity basis over the expected average remaining period of service of the employees covered by Ontario Hydro's pension plan.

#### **Research and development**

Research and development costs are charged to operations in the year incurred, except for those related directly to the design or construction of a specific capital facility which are capitalized as part of the facility.



# STATEMENT OF OPERATIONS

for the year ended December 31, 1991

	1991	1990
<i>millions of dollars</i>		
<b>Revenues</b>		
Primary power and energy		
Municipal utilities	4,873	4,373
Rural retail customers	1,397	1,297
Direct industrial customers	811	792
	7,081	6,462
Secondary power and energy (note 1)	62	22
	7,143	6,484
<b>Costs</b>		
Operation, maintenance and administration	2,037	1,927
Fuel used for electric generation	1,128	1,035
Power purchased	151	477
Nuclear agreement – payback	(6)	(15)
Provincial government levies (note 2)	252	235
Depreciation (note 3)	1,136	908
	4,698	4,567
<b>Income before financing charges</b>	2,445	1,917
<b>Financing charges</b>		
Interest (note 4)	2,234	1,803
Foreign exchange	7	(15)
	2,241	1,788
<b>Net income</b>	204	129
<b>Appropriation for (withdrawal from):</b>		
Debt retirement	416	374
Stabilization of rates and contingencies	(212)	(245)
	204	129

See accompanying summary of significant accounting policies and notes to financial statements.



## STATEMENT OF FINANCIAL POSITION

as at December 31, 1991

millions of dollars

### ASSETS

#### Fixed assets (note 5)

Fixed assets in service

34,369

32,497

Less accumulated depreciation

8,744

7,823

25,625

24,674

Construction in progress

12,545

10,465

38,170

35,139

#### Current assets

Accounts receivable

919

751

Fuel for electric generation (note 6)

1,342

1,352

Materials and supplies, at cost

402

398

2,663

2,501

#### Other assets

Unamortized debt costs

252

248

Unamortized advances for fuel supplies (note 7)

81

709

Unamortized deferred costs (note 8)

858

227

Deferred pension costs

515

—

Unamortized deferred demand management costs

94

9

Long-term accounts receivable and other assets

611

540

2,411

1,733

43,244

39,373

See accompanying summary of significant accounting policies and notes to financial statements.

<i>millions of dollars</i>	1991	1990
<b>LIABILITIES</b>		
<b>Long-term debt</b> (note 9)	<b>30,097</b>	<b>27,701</b>
<b>Current liabilities</b>		
Bank indebtedness (note 10)	641	622
Accounts payable and accrued charges	876	727
Short-term notes payable	94	108
Accrued interest	942	768
Long-term debt payable within one year	2,063	1,677
	<b>4,616</b>	<b>3,902</b>
<b>Other liabilities</b>		
Long-term accounts payable and accrued charges	571	230
Accrued fixed asset removal and irradiated fuel disposal costs (note 11)	1,341	1,124
	<b>1,912</b>	<b>1,354</b>
<b>CONTINGENCIES</b> (note 7)		
<b>EQUITY</b>		
Accumulated debt retirement appropriations	4,716	4,301
Reserve for stabilization of rates and contingencies	1,776	1,988
Contributions from the Province of Ontario as assistance for rural construction	127	127
	<b>6,619</b>	<b>6,416</b>
	<b>43,244</b>	<b>39,373</b>

On behalf of the Board,

*M. Elisen*

Chair

*Al Hol-*

President

Toronto, Canada,  
March 9, 1992

## STATEMENT OF ACCUMULATED DEBT RETIREMENT APPROPRIATIONS

for the year ended December 31, 1991

	1991			1990
	<i>Municipal Utilities</i>	<i>Power District (Rural Retail and Direct Industrial Customers)</i>	<i>Total</i>	<i>Total</i>
<i>millions of dollars</i>				
Balances at beginning of year	2,974	1,327	4,301	3,927
Appropriation	288	128	416	374
Transfers and refunds on annexations by municipal utilities	14	(15)	(1)	—
Balances at end of year	3,276	1,440	4,716	4,301

## STATEMENT OF RESERVE FOR STABILIZATION OF RATES AND CONTINGENCIES

for the year ended December 31, 1991

	1991					1990
	<i>Held for the benefit of all customers</i>	<i>Held for the benefit of certain groups of customers</i>				
	<i>Municipal Utilities</i>	<i>Rural Retail Customers</i>	<i>Direct Industrial Customers</i>	<i>Total</i>		<i>Total</i>
<i>millions of dollars</i>						
Balances at beginning of year	1,967	1	14	6	1,988	2,233
Appropriation (withdrawal)	(209)	—	—	(3)	(212)	(245)
Balances at end of year	1,758	1	14	3	1,776	1,988

See accompanying summary of significant accounting policies and notes to financial statements.

# STATEMENT OF SOURCE OF CASH USED FOR INVESTMENT IN FIXED ASSETS

for the year ended December 31, 1991

	1991	1990
<i>millions of dollars</i>		
<b>Cash provided from operations</b> (note 12)	<b>1,381</b>	754
<b>Cash provided from financing</b>		
Long-term debt issued	5,787	4,148
Long-term debt retired	(3,044)	(1,633)
	<b>2,743</b>	2,515
Changes in cash and cash equivalents		
Bank indebtedness – increase	19	266
Short-term notes payable – (decrease) increase	(14)	108
	<b>5</b>	374
Cash provided from financing	<b>2,748</b>	2,889
<b>Cash provided from operations and financing</b>	<b>4,129</b>	3,643
Cash used for financing other assets	(773)	(51)
<b>Cash used for investment in fixed assets</b> (note 12)	<b>3,356</b>	3,592

See accompanying summary of significant accounting policies and notes to financial statements.

## NOTES TO FINANCIAL STATEMENTS

## 1. SECONDARY POWER AND ENERGY

Secondary power and energy revenues include \$60 million (1990: \$20 million) from sales of electricity to United States utilities.

## 2. PROVINCIAL GOVERNMENT LEVIES

2. PROVINCIAL GOVERNMENT LEVIES	1991	1990
<i>millions of dollars</i>		
Provincial water rentals	105	102
Provincial debt guarantee fee	147	133
	252	235

Provincial government levies are the amounts charged by the Ontario Provincial Government for the debt guarantee fee and water rentals.

### Provincial water rentals

Provincial water rentals are the amounts paid to the Province of Ontario for the use of water for hydroelectric generation.

## Provincial debt guarantee fee

The Province of Ontario has legislated that Ontario Hydro pay to the Province an annual debt guarantee fee of one half of one per cent on the total debt guaranteed by the Province outstanding as of the preceding December 31.

### 3. DEPRECIATION

3. DEPRECIATION	1991	1990
<i>millions of dollars</i>		
Depreciation of fixed assets in service	991	858
Amortization of deferred costs	39	39
Fixed asset removal costs	140	87
Other removal costs	84	38
	<u>1,254</u>	<u>1,022</u>
Less:		
Depreciation charged to – construction in progress	68	59
– heavy water production	50	50
– fuel for electric generation	2	2
Other	(2)	3
	<u>118</u>	<u>114</u>
	<u>1,136</u>	<u>908</u>



#### 4. INTEREST

	1991	1990
<i>millions of dollars</i>		
Interest on bonds, notes, and other debt	3,462	3,096
Interest on accrued fixed asset removal and irradiated fuel disposal costs	121	108
	3,583	3,204
Less:		
Interest charged to – construction in progress	1,093	1,169
– heavy water production	62	71
– fuel for electric generation	38	78
Interest earned on investments	156	83
	1,349	1,401
	2,234	1,803

#### 5. FIXED ASSETS

	1991	
<i>millions of dollars</i>		
	<i>Assets in Service</i>	<i>Accumulated Depreciation</i>
Generating stations – hydroelectric	2,172	714
– fossil	3,972	1,705
– nuclear	14,184	2,561
Heavy water	2,909	391
Transmission and distribution	8,192	1,979
Heavy water production facilities	1,129	603
Administration and service facilities	1,811	791
	34,369	8,744
		12,545

	1990	
<i>millions of dollars</i>		
	<i>Assets in Service</i>	<i>Accumulated Depreciation</i>
Generating stations – hydroelectric	1,972	689
– fossil	3,992	1,630
– nuclear	13,545	2,118
Heavy water	2,907	340
Transmission and distribution	7,349	1,797
Heavy water production facilities	1,129	551
Administration and service facilities	1,603	698
	32,497	7,823
		10,465

## 5. FIXED ASSETS *continued*

A major portion of the construction in progress as at December 31, 1991 relates to the construction program for the Darlington nuclear generating station. The cost of construction in progress associated with this program, including heavy water, amounted to \$9,482 million as at December 31, 1991 (1990: \$8,268 million).

Darlington Unit 2 was declared in-service for commercial operation in October 1990. In December 1990, investigation into a refuelling problem in this unit revealed damage to some fuel bundles. As a consequence, the unit was shut down in January 1991 for more detailed inspection and investigation of the problem. Although the investigation is not yet complete, Unit 2 is expected to be restarted in the second half of 1992. Unit 1 was being commissioned when it was shut down in March 1991 in order to carry out planned tests and inspection for potential fuel bundle damage. Unit 1 was restarted in December 1991 and reached full power in January 1992 before being shut down for further tests and inspection. Units 1 and 3 are forecast to be declared in-service in the second half of 1992. Unit 4 is planned to be placed in-service in 1993. When completed, the Darlington nuclear generating station will provide a total of 3,524 megawatts of dependable capacity. The estimated cost to complete the Darlington construction program is \$1,149 million, including cost escalation and interest of approximately \$754 million. Because of the uncertainties associated with long construction lead times and planned in-service dates, the estimated cost to complete the station is subject to change.

## 6. FUEL FOR ELECTRIC GENERATION

	1991	1990
<i>millions of dollars</i>		
Inventories – uranium	773	733
– coal	483	518
– oil	86	101
	<b>1,342</b>	<b>1,352</b>

## 7. UNAMORTIZED ADVANCES FOR FUEL SUPPLIES

	1991	1990
<i>millions of dollars</i>		
Uranium – Rio Algom Limited	68	399
– Denison Mines Limited	13	310
	<b>81</b>	<b>709</b>

In prior years, Ontario Hydro entered into long-term contracts with Rio Algom Limited (Rio Algom) and Denison Mines Limited (Denison) for uranium supplies.

**Rio Algom Limited:** In June 1991, Ontario Hydro and Rio Algom agreed to amend the long-term uranium supply contract (Rio Algom Contract). The amendments include lowering the prices for deliveries of uranium concentrates over the period 1991 through 1996. In addition, Ontario Hydro and Rio Algom agreed to terminate the Rio Algom Contract effective December 31, 1996. At the expiration of the Rio Algom Contract, Rio Algom is not required to refund any outstanding advances that Ontario Hydro has made for pre-production costs and Ontario Hydro is required to pay for mine related termination costs, including mine shutdown. Ontario Hydro will make contributions totalling \$65 million over the period 1991 through 1993, for use in carrying out the Ontario government's Elliot Lake Region Economic Development Program (Elliot Lake Program). The outstanding advances and associated costs at the expiration of the Rio Algom Contract,

7. UNAMORTIZED ADVANCES FOR FUEL SUPPLIES *continued*

the estimated mine-related termination costs and the contributions to the Elliot Lake Program are estimated to total \$448 million. This amount will not be charged directly to operations in 1991, since the Board of Directors, under its rate setting authority, determined that this amount will be deferred and amortized for recovery through future electricity rates on a straight-line basis over the period 1994 through 2003 (see note 8).

**Denison Mines Limited:** In April 1991, Ontario Hydro notified Denison, pursuant to the provisions in the contract, that the long-term uranium supply contract (Denison Contract) will be terminated effective January 1, 1993. On termination of the Denison Contract, Denison is not required to refund any outstanding advances that Ontario Hydro has made for pre-production costs. The outstanding advances and associated costs at the effective date of cancellation of the Denison Contract are estimated to be \$269 million. This amount will not be charged directly to operations in 1991, since the Board of Directors, under its rate setting authority, determined that this amount will be deferred and amortized for recovery through electricity rates on a straight-line basis over the period 1992, the first year such cost can be reflected in rates, through 2001 (see note 8).

In November 1991, Denison submitted to Ontario Hydro a statement containing its proposed estimated price to be billed to Ontario Hydro for uranium deliveries in 1992. The statement included a significant additional amount for depreciation and other costs, which Denison claims result from a revision to the estimated life of its Elliot Lake uranium mine as a consequence of the contract termination by Ontario Hydro and Denison's decision to close the mine. Ontario Hydro informed Denison that its statement did not represent compliance by Denison with its obligations to deliver a valid estimate of the cost of production of a pound of uranium concentrates for 1992. The position being asserted by Denison would result in additional charges estimated to be in excess of \$300 million related to uranium deliveries in 1991 and 1992. On January 30, 1992, Ontario Hydro initiated legal action against Denison in the Ontario Court (General Division) disputing such charges and requesting the Court to rule on certain aspects of the Denison Contract with respect to the dispute. Subsequently, on February 27, 1992, Denison applied to the Court for an order staying Ontario Hydro's legal action on the grounds that the dispute is required to be submitted to arbitration pursuant to the Denison Contract. At this time, the outcome of the dispute is not determinable, and as such, no provision has been accrued in Ontario Hydro's financial statements with respect to any amounts in dispute.

8. UNAMORTIZED DEFERRED COSTS

*millions of dollars*

	1991	1990
Bruce heavy water plant D	74	111
Wesleyville generating station	4	7
Fuel oil contract	29	58
Coal purchase agreement	34	51
Uranium supply contracts	717	—
	858	227

Unamortized deferred costs are amounts that the Board of Directors, under its rate setting authority, has determined be deferred and amortized for recovery through electricity rates on a straight-line basis over a specified period of years.

As a result of the decision taken in 1991 by Ontario Hydro to amend the Rio Algom Limited and cancel the Denison Mines Limited long-term uranium supply contracts, \$592 million was transferred from "Unamortized advances for fuel supplies" (see note 7).

In 1991, \$40 million and \$46 million (1990: \$39 million and \$46 million) were charged respectively to depreciation and fuel used for electric generation.

## 9. LONG-TERM DEBT

millions of dollars

	1991	1990
Bonds and notes payable	32,098	29,292
Other long-term debt	62	86
	32,160	29,378
Less payable within one year	2,063	1,677
	30,097	27,701

Bonds and notes payable, expressed in Canadian dollars, are summarized by years of maturity and by the currency in which they are payable in the following table:

Years of Maturity	1991			1990	
	Principal Outstanding			Principal Outstanding	Weighted Average Interest Rate
	Canadian	Foreign	Total	Total	
	millions of dollars			millions of dollars	per cent
1991	—	—	—	1,653	
1992	1,139	898	2,037	2,021	
1993	2,799	41	2,840	2,800	
1994	1,323	562	1,885	1,927	
1995	1,836	735	2,571	2,697	
1996	2,461	164	2,625	—	
1 - 5 years	9,558	2,400	11,958	11,098	11.0
6 -10 years	6,734	1,127	7,861	6,531	10.0
11 -15 years	1,782	370	2,152	3,509	11.2
16 -20 years	3,403	2,192	5,595	5,281	10.4
21 -25 years	648	534	1,182	1,873	13.2
26 years and over	3,350	—	3,350	1,000	10.9
	25,475	6,623	32,098	29,292	10.8
<b>Currency in which payable:</b>					
Canadian dollars			25,475	22,446	
United States dollars			6,496	6,846	
Swiss francs			127	—	
			32,098	29,292	

## 9. LONG-TERM DEBT *continued*

Bonds and notes payable are either held, or guaranteed as to principal and interest, by the Province of Ontario.

Bonds and notes payable in United States dollars include \$4,292 million (1990: \$5,056 million) of Ontario Hydro bonds held by the Province of Ontario and having terms identical with Province of Ontario issues sold in the United States on behalf of Ontario Hydro.

Ontario Hydro has entered into financial arrangements as a vehicle for setting the interest rates in advance of future bond issues. As at December 31, 1991, obligations to sell \$717 million of Government of Canada bonds in 1992 were outstanding (1990: nil).

Ontario Hydro has entered into financial arrangements to hedge a portion of the foreign currency exposure related to long-term debt. These arrangements are in forward exchange contracts, foreign currency swap contracts and foreign currency options. Forward exchange contracts amounted to US\$2,834 million as at December 31, 1991 (1990: US\$1,128 million), having a weighted average Canadian dollar exchange rate of 1.22 (1990: 1.27). These forward exchange contracts hedge principal and interest payments amounting to US\$1,567 million due in 1992 and the remaining US\$1,267 million hedge principal and interest payments due over the period 1993 through 1998. Foreign currency swap contracts to exchange US\$897 million and Swiss franc 261 million of principal and interest payments into Canadian dollars were outstanding as at December 31, 1991 (1990: US\$850 million). Of this, US\$60 million and Swiss franc 11 million are due in 1992, and US\$837 million and Swiss franc 250 million are due over the period 1993 to 2001. Option contracts giving Ontario Hydro the right to buy US\$135 million were outstanding as at December 31, 1991 (1990: nil).

### Other long-term debt

Other long-term debt	1991			1990
	Years of Maturity	Interest Rate		
	per cent	millions of dollars		millions of dollars
Balance due to Atomic Energy of Canada Limited				
on purchase of Bruce heavy water plant A	1992	7.8	24	47
Capitalized lease obligation for the Head Office				
building, payable in US dollars	2005	8.0	38	39
			62	86

Payments required on the above debt, excluding interest, will total \$34 million over the next five years. The amount payable within one year is \$26 million (1990: \$24 million).

## 10. BANK INDEBTEDNESS

Bank indebtedness includes short-term bank lines of credit available to Ontario Hydro in the amount of \$600 million. The lines of credit are unsecured and bear interest at approximately the Canadian prime rate.



## 11. ACCRUED FIXED ASSET REMOVAL AND IRRADIATED FUEL DISPOSAL COSTS

	1991	1990
<i>millions of dollars</i>		
Accrued fixed asset removal costs		
– accrued decommissioning costs	376	330
– accrued fuel channel removal costs	347	278
	723	608
Accrued irradiated fuel disposal costs	618	516
	1,341	1,124

### Fixed asset removal costs

Fixed asset removal costs are the costs of decommissioning nuclear and fossil generating stations and heavy water production facilities after the end of their service lives, and the costs of removing certain fuel channels which are expected to be replaced during the life of the nuclear reactors. The significant assumptions used in estimating fixed asset removal costs were:

- decommissioning of nuclear generating stations in the 2042 to 2065 period on the deferred dismantlement basis (dismantlement following storage with surveillance for a 30-year period after shutdown of the reactors), and a transportation distance of 1,000 kilometres from nuclear generating facilities to disposal facilities;
- dismantlement of Bruce heavy water plants A, B and D in the 1995 to 2005 period;
- interest rates through to 2065 ranging from 9% to 11% (1990: 9% to 10%);
- escalation rates through to 2065 ranging from 4% to 7% (1990: 4% to 7%); and
- removal of fuel channels in Pickering nuclear generating station A Unit 4 in the 1991 to 1993 (1990: Units 3 and 4 in the 1989 to 1992) period, Bruce nuclear generating station A Units 1 and 2 in the 1993 to 1999 (1990: 1993 to 1999) period and Units 3 and 4 in the 2002 to 2010 (1990: 2002 to 2010) period, Pickering B in the 2012 to 2017 (1990: 2012 to 2017) period, Bruce B in the 2014 to 2019 (1990: 2014 to 2019) period, and Darlington nuclear generating station in the 2019 to 2024 (1990: 2019 to 2024) period.

Because of possible changes to the above factors and the methods used for decommissioning and fuel channel removal, these costs are subject to revision.

### Irradiated fuel disposal costs

The significant assumptions used in estimating the future irradiated fuel disposal costs were:

- an in-service date of the year 2025 (1990: 2025) for irradiated nuclear fuel disposal facilities;
- a transportation distance of 1,000 kilometres from nuclear generating facilities to disposal facilities;
- interest rates through to the disposal date ranging from 9% to 11% (1990: 9% to 10%); and
- escalation rates through to the disposal date ranging from 4% to 7% (1990: 4% to 7%).

Because of the uncertainties associated with the technology of disposal, and the above factors, these costs are subject to change.

## 12. STATEMENT OF SOURCE OF CASH USED FOR INVESTMENT IN FIXED ASSETS

The statement of source of cash used for investment in fixed assets reports the investment in fixed assets resulting from the cash flows from operating and financing activities and the effects of changes in accounts payable and accrued charges affecting investment in fixed assets during the year. This statement focuses on cash used for investment in fixed assets in view of Ontario Hydro's current level of construction activities which are financed from the two sources, cash provided from operations and cash provided from financing. Cash provided from financing represents the amount of cash provided from the issuance of long-term debt, less the amount of cash used to retire long-term debt, and the effects of changes in cash and cash equivalents, defined to be cash and short-term investments less bank indebtedness and short-term notes payable.

The components of cash provided from operations and the reconciliation of investment in fixed assets to cash used for investment in fixed assets are summarized below:

	1991	1990
<i>millions of dollars</i>		
<b>Cash provided from operations</b>		
Net Income	204	129
Items not requiring cash in the current year		
Depreciation	1,136	908
Amortization of foreign exchange gains and losses	(22)	(48)
Provision for irradiated fuel disposal costs	45	35
Other	42	121
	1,405	1,145
Changes in non-cash working capital and long-term accounts payable affecting operations – (increase)	(24)	(391)
Cash provided from operations	1,381	754
<b>Investment in fixed assets</b>		
The reconciliation of the change in fixed assets during the year with the investment in fixed assets and cash used for investment in fixed assets for the year:		
Change in fixed assets	3,031	2,777
Depreciation of fixed assets in service	991	858
Less depreciation charged to heavy water production and construction in progress	(119)	(108)
	872	750
Net book value of fixed assets sold or retired	31	17
Investment in fixed assets	3,934	3,544
Changes in accounts payable and accrued charges affecting investment in fixed assets – (increase) decrease	(578)	48
Cash used for investment in fixed assets	3,356	3,592

### 13. PENSION, INSURANCE AND HEALTH CARE

Ontario Hydro's employee benefit programs include the pension plan, the group life insurance plan and the long-term disability plan. The assets of these plans and the changes in assets during the year are shown in the financial statements of The Pension and Insurance Fund and are not included in Ontario Hydro's financial statements.

#### Pension Plan

In June 1991, Ontario Hydro and the Ontario Hydro Employees' Union, Local 1000 of the Canadian Union of Public Employees—C.L.C. (the Union) reached a settlement regarding the monetary claims related to the Corporation's contributions for the years 1965, 1980 to 1985 and 1987 to 1989. Pursuant to the terms of the settlement, Ontario Hydro agreed to pay into the Pension Plan an additional \$228 million, plus interest at the pension fund rate of return on this amount from January 1, 1991 to the payment date. The Society of Ontario Hydro Professional and Administrative Employees agreed with the terms of the settlement. Court approval, which ensures that the settlement is binding upon all current and former Pension Plan members and their beneficiaries, was obtained in November 1991. Ontario Hydro has since paid the \$228 million plus interest into the Pension Plan. The amount paid was charged to the "Deferred pension cost" account in the statement of financial position and the balance in this account represents the cumulative difference between the annual funding contributions and the annual pension costs. Ontario Hydro and the Union also agreed to proceed to court with the remaining issues pertaining to the governance of the Pension Plan.

The pension costs for 1991 were \$143 million (1990: \$165 million). In 1991, about \$94 million (1990: \$124 million) of the pension costs were charged to operations and \$49 million (1990: \$41 million) were capitalized.

The pension costs for 1991 were actuarially determined for accounting purposes using the following significant assumptions which take into consideration the long-term nature of the pension plan:

- rate used to discount future pension benefits – 8.75% (1990: 8.50%);
- rate used to estimate interest cost – 8.75% (1990: 8.50%);
- rate used to estimate return on investments – 9.75% (1990: 8.50%)
- salary schedule escalation rate – 5.75% (1990: 5.75%);
- rate used to estimate improvements in pension benefits to partially offset the effect of increase in cost of living – 3.75% (1990: 3.75%); and
- average remaining period of service of the employees – 16 years (1990: 16 years).

Based on these assumptions, the actuarial present value of the accrued pension benefits is estimated to be \$5,430 million as at December 31, 1991 (1990: \$4,756 million), and the pension plan assets available for these benefits were \$5,227 million (1990: \$4,489 million) based on a five-year market value average.

### **13. PENSION, INSURANCE AND HEALTH CARE** *continued*

#### **Group life insurance plan**

The group life insurance plan had assets of \$4 million as at December 31, 1991 (December 31, 1990: \$13 million). Effective April 1, 1986, the assets are being used to pay both the employee and employer insurance premiums for all members of the plan until such time as the assets are fully utilized.

#### **Group health care plan**

Ontario Hydro provides a group health care plan to its employees. In 1991, the cost of providing these benefits was \$42 million (1990: \$37 million).

#### **Other post-employment benefits**

In addition to pension benefits, Ontario Hydro provides group life insurance and health care benefits to its retired employees and, in certain cases, their surviving spouses and unmarried dependents. The cost of providing the group life insurance and health care benefits is charged to operations as the benefits are incurred. In 1991, the cost of providing these benefits was \$14 million (1990: \$12 million).

### **14. RESEARCH AND DEVELOPMENT**

In 1991 approximately \$145 million of research and development costs were charged to operations and \$20 million were capitalized (1990: \$148 million and \$16 million, respectively).

## FIVE-YEAR SUMMARY OF FINANCIAL AND OPERATING STATISTICS

	1991	1990	1989	1988	1987
<i>millions of dollars</i>					
<b>Revenues</b>					
Primary power and energy					
Municipal utilities	4,873	4,373	4,209	3,824	3,441
Rural retail customers	1,397	1,297	1,256	1,103	968
Direct industrial customers	811	792	790	730	675
	7,081	6,462	6,255	5,657	5,084
Secondary power and energy	62	22	91	156	196
	7,143	6,484	6,346	5,813	5,280
<b>Costs</b>					
Operation, maintenance and administration	2,037	1,927	1,534	1,354	1,150
Fuel and fuel-related	1,273	1,497	1,363	1,190	1,223
Provincial government levies	252	235	177	91	85
Depreciation	1,136	908	845	811	723
	4,698	4,567	3,919	3,446	3,181
<b>Income before financing charges</b>	2,445	1,917	2,427	2,367	2,099
<b>Financing charges</b>					
Gross interest	3,583	3,204	3,016	2,845	2,744
Capitalized interest	(1,193)	(1,318)	(1,175)	(1,012)	(978)
Investment income	(156)	(83)	(144)	(93)	(64)
Foreign exchange	7	(15)	31	1	126
	2,241	1,788	1,728	1,741	1,828
<b>Net income</b>	204	129	699	626	271
<b>Financial position</b>					
Total assets	43,244	39,373	36,277	34,358	32,657
Fixed assets	38,170	35,139	32,362	29,975	27,986
Long-term debt	30,097	27,701	25,141	24,240	23,862
Equity	6,619	6,416	6,287	5,588	4,962
<b>Cash flows</b>					
Cash provided from operations	1,381	754	1,705	1,368	1,204
Cash provided from financing	2,748	2,889	1,330	1,350	1,397
Cash used for investment in fixed assets	3,356	3,592	2,992	2,673	2,452
Investment in fixed assets	3,934	3,544	3,095	2,689	2,524
<b>Financial indicators</b>					
Interest coverage <sup>1</sup>	1.06	1.04	1.24	1.23	1.10
Debt ratio <sup>2</sup>	0.838	0.829	0.817	0.829	0.836
<i>millions of kilowatt-hours</i>					
<b>Primary energy sales<sup>3</sup></b>					
Municipal utilities	93,623	92,116	93,715	89,607	84,058
Rural retail customers	18,988	19,444	19,767	18,365	16,599
Direct industrial customers	18,353	19,315	20,491	20,096	19,561
	130,964	130,875	133,973	128,068	120,218
<b>Secondary energy sales<sup>3</sup></b>	2,123	577	2,292	5,019	6,515
<b>Energy and Demand</b>					
Installed dependable peak capacity <i>megawatts</i> <sup>4</sup>	32,333	31,350	30,271	30,333	30,080
December primary peak demand <i>megawatts</i>	22,933	21,785	23,630	23,012	20,524
Primary energy made available <i>millions of kilowatt-hours</i> <sup>5</sup>	136,966	136,744	140,770	134,395	126,455



	1991	1990	1989	1988	1987
<b>Number of primary customers<sup>3</sup></b>					
Municipal utilities	311	314	315	316	316
Rural retail customers	925,397	918,568	894,485	863,049	835,937
Direct industrial customers	118	119	116	107	108
<i>in cents per kilowatt-hour of total energy sales</i>					
<b>Average revenue<sup>3</sup></b>					
Primary power and energy					
Municipal utilities	5.205	4.747	4.491	4.268	4.094
Rural retail customers	7.883	7.352	6.801	6.361	6.248
Direct industrial customers	4.419	4.100	3.855	3.633	3.451
All primary customers combined	5.419	5.024	4.715	4.453	4.268
Secondary power and energy	2.920	3.813	3.970	3.108	3.008
All classifications combined	5.419	5.001	4.702	4.402	4.203
<i>expressed as a per cent</i>					
<b>Average rate increases</b>					
Municipal utilities	8.7	6.1	5.0	4.7	5.2
Rural retail customers	8.7	5.3	5.9	4.4	6.6
Direct industrial customers	7.8	5.6	6.0	5.2	5.6
All primary customers combined	8.6	5.9	5.3	4.7	5.5
<i>in cents per kilowatt-hour of energy generated</i>					
<b>Average cost<sup>3,6</sup></b>					
Hydroelectric					
Operation, maintenance and administration	.299	.271	.275	.270	.276
Water rentals	.338	.303	.287	.274	.285
Depreciation, debt guarantee fee and financing charges	.424	.373	.389	.386	.465
	1.061	.947	.951	.930	1.026
Nuclear					
Operation, maintenance and administration	1.033	1.100	.739	.623	.508
Uranium	.502	.490	.458	.453	.481
Depreciation, debt guarantee fee and financing charges	2.756	2.631	2.241	2.078	2.193
	4.291	4.221	3.438	3.154	3.182
Fossil					
Operation, maintenance and administration	.839	.899	.600	.530	.488
Coal, gas and oil	2.388	2.479	2.217	2.258	2.600
Depreciation, debt guarantee fee and financing charges	1.489	1.274	.931	.918	.933
	4.716	4.652	3.748	3.706	4.021
<b>Average number of employees</b>					
Regular	28,396	26,821	25,147	24,543	24,066
Non-regular <sup>7</sup>	7,309	9,653	8,929	7,930	8,081

1 Interest coverage represents net income plus interest on bonds, notes, and other debt divided by interest on bonds, notes and other debt.

2 Debt ratio represents debt (bonds and notes payable, short-term notes payable, other long-term debt, accrued fixed asset removal and irradiated fuel disposal costs and bank indebtedness less unamortized foreign exchange gains and losses) divided by debt plus equity.

3 Figures for 1991 are preliminary.

4 Installed dependable peak capacity represents the net output power supplied by all generating units, and includes non-operating reserve facilities: 1991: 1,551 megawatts; 1990: 1,551 megawatts; 1989: 2,109 megawatts; 1988: 2,109 megawatts; and 1987: 2,667 megawatts. Also included are net firm power purchase contracts.

5 Primary energy made available represents primary energy sales plus transmission losses and energy used for heavy water production and generation projects.

6 Average cost per kilowatt-hour represents the costs attributable to generation but excludes the costs related to transmission, distribution and corporate administrative activities. These figures reflect the historical accounting costs of operating facilities and the actual energy generated by these facilities during the year.

7 The majority of non-regular staff are construction trades persons.

**FIVE-YEAR SUMMARY OF STATISTICS**  
**CUSTOMERS SERVED BY ONTARIO HYDRO AND ASSOCIATED MUNICIPAL UTILITIES**

	1991 <sup>1</sup>	1990	1989	1988	1987
<i>in thousands</i>					
<b>Total number of customers</b>					
Residential	<b>3,170</b>	3,129	3,064	2,958	2,868
Farm	<b>105</b>	105	105	106	106
Commercial and industrial	<b>421</b>	420	408	392	377
	<b>3,696</b>	3,654	3,577	3,456	3,351
<i>in kilowatt-hours per customer</i>					
<b>Average annual use</b>					
Residential	<b>11,500</b>	11,668	11,856	11,588	11,019
Farm	<b>23,944</b>	23,945	24,762	24,795	23,547
Commercial and industrial	<b>207,000</b>	212,193	225,103	224,705	220,834
<i>in cents per kilowatt-hour</i>					
<b>Average revenue<sup>2</sup></b>					
Residential	<b>7.24</b>	6.68	6.25	5.99	5.73
Farm	<b>7.34</b>	6.80	6.44	6.14	5.89
Commercial and industrial	<b>5.68</b>	5.22	4.88	4.62	4.40
All customers	<b>6.12</b>	5.67	5.29	5.03	4.79

<sup>1</sup> Figures for 1991 are preliminary.

<sup>2</sup> Includes rural rate assistance.

## BOARD OF DIRECTORS

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Ottawa  
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Ontario Hydro

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Spring Group of Companies  
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Timmins  
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Aboriginal and Northern Affairs

Arvo Niitenberg  
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Environment and Corporate Planning

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Property Development

Hal Wright  
Regions

Joe Walters  
Thermal Operations

Elgin Horton  
Nuclear Operations

Al Kupcis  
Procurement and  
Power System Planning  
(Effective February 1, 1992)

Vacant  
Information Management  
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P1B 8L4

## Northwestern Region

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P7A 4L5

## Western Region

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N6E 1M1

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E. McVey  
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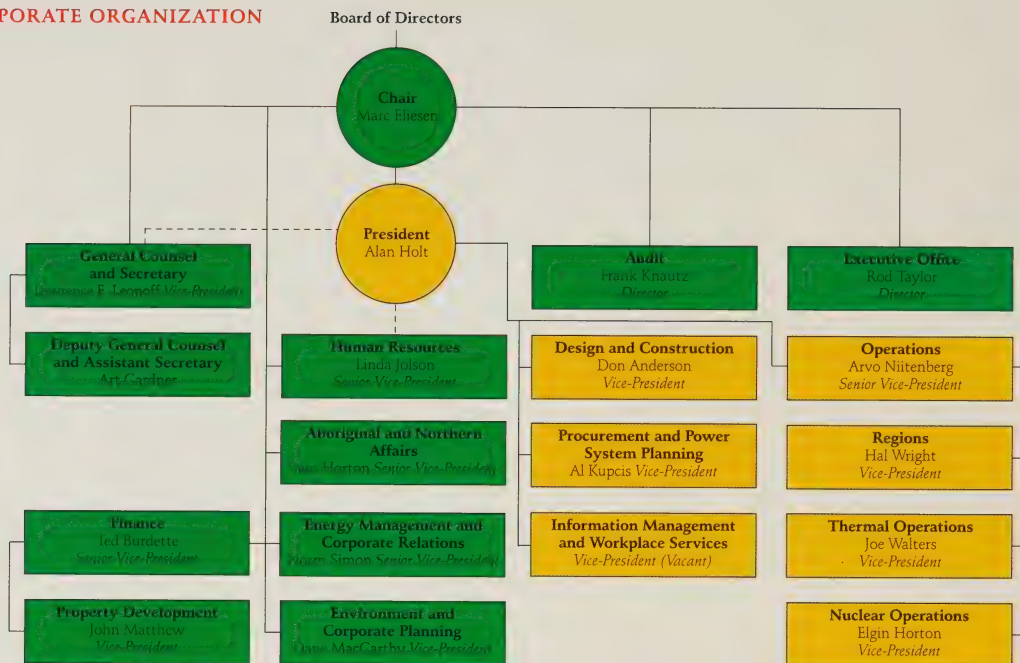
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*Director of Research*

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Garth Leader  
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Brian Churchill  
*Project Manager – In-Service Nuclear Stations*

John Oreskovich  
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Vacant  
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*Director of Power System Operations*

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**Ontario Hydro**  
Let's Give Tomorrow a Hand.

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LET'S GIVE TOMORROW A HAND\*

# ONTARIO HYDRO ANNUAL REPORT 1992



**Our continuing purpose at Ontario Hydro**  
is to make Ontario the most energy efficient and  
competitive economy in the world, and a  
primary example of environmentally sound and  
sustainable development.

Today, we achieve this purpose by maintaining  
electricity supply options which best meet  
the need for reliability and value, and by promoting  
the efficient use of electricity while helping  
sustain the environment for future generations.

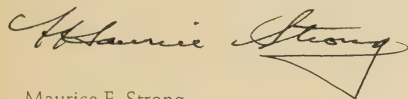
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## LETTER TO THE MINISTER

To the Honourable C. J. (Bud) Wildman, Minister of Environment and Energy

On behalf of the Board of Directors, I am pleased to submit to you Ontario Hydro's report of the financial position of the corporation, with discussion and analysis of issues and initiatives for 1992 and beyond.

We want to thank your staff at the Ministry of Environment and Energy for their cooperation extended over the year.



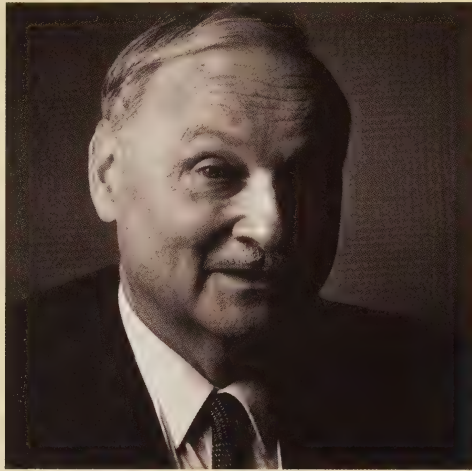
Maurice F. Strong

*Chairman and Chief Executive Officer*

## FINANCIAL HIGHLIGHTS

*millions of dollars*

	1992	1991
Revenues	7,768	7,143
Net Income	312	204
Total Assets	46,671	43,244
Cash Used for Investment in Fixed Assets	3,375	3,356



In a world that is embracing –  
and rapidly re-tooling for – a new industrial  
revolution of sustainable and competitive  
economic development, the Province of Ontario  
cannot afford to be anywhere but in a  
position of pre-eminence. And Ontario Hydro  
has a vital role to play in helping  
the province set world benchmarks for energy  
efficiency and environmental responsibility.



## MESSAGE FROM THE CHAIRMAN

**T**he year 1992 marked the beginning of a new era for Ontario Hydro. It was a year in which a number of complex and crucial factors combined to confront the corporation with perhaps the most serious crisis in its 86-year history. This combination of circumstances – described in detail elsewhere in this Annual Report – also presented Ontario Hydro with an unprecedented opportunity for rejuvenation.

By year-end, it was clear to the Board of Directors, to senior management, and to virtually all of the people who work at Ontario Hydro, that fundamental change was not only advisable but unavoidable. In spite of a long history of exemplary service and reliability, and of unparalleled technical leadership, the Ontario Hydro that had met the electrical needs of Ontario for most of this century was not structured or positioned to meet the dramatically different needs of the 21st century.

To be sure, the corporation had initiated significant changes even before the year under review. It had created an Environment Division and set itself a corporate goal of being in the vanguard of environmental protection. It had embarked on an energy efficiency program that had few rivals in the electrical utility industry. It had established an Aboriginal and Northern Affairs Branch in order to address long-standing issues and bring more equity to relationships with customers and the public.

But these and other laudable improvements designed to bring Hydro in step with modern needs had been grafted onto a corporate structure whose foundation was laid in a less complicated, more predictable and distant past.

The tumultuous events of 1992 brought two compelling requirements into vivid focus:

- The need to reduce costs in order to halt

spiralling rate increases and to control and reduce the company's indebtedness.

- The need to re-fashion the corporation fundamentally to make it more business-like, more open, more flexible, more sensitive to customer expectations and more competitive.

In a world that is embracing – and rapidly re-tooling for – a new industrial revolution of sustainable and competitive economic development, the Province of Ontario cannot afford to be anywhere but in a position of pre-eminence. And Ontario Hydro has a vital role to play in helping the province set world benchmarks for energy efficiency and environmental responsibility.

Ontario Hydro is now resolutely set on a transition path designed to enable it to meet this enormous and exciting challenge. Several initiatives designed to address the more urgent needs have recently been announced. Major changes that will radically transform the corporation have yet to come.

They will not be a one-time phenomenon, but rather the beginning of a continuous process of change at Ontario Hydro. Nor will this process be an easy one. It will require the complete and sustained engagement of all of Hydro's employees, and the support of its partners and stakeholders.

The rebuilding of Ontario Hydro is both imperative and practicable. It will, I am confident, generate a Hydro that continues to provide challenging and rewarding careers for employees, that better serves the interests of its customers, and that is the cornerstone of a new age of sustainable, competitive economic development in the Province of Ontario.

  
Maurice F. Strong, *Chairman*



Ontario Hydro is committed to helping Ontario become a world leader in energy efficiency, competitiveness and sustainable development.

## ONTARIO HYDRO IN TRANSITION

**A**s the people of Ontario Hydro look to the corporation's next century of service, they see the need for a new Ontario Hydro. It must become an efficient, innovative and flexible organization that is at the heart of Ontario's economic and social prosperity. It will be a leader in sustaining the environment for present and future generations. Above all, it will be an energy service company that is closely in step with people's needs and the needs of our planet.

The job of creating that new Ontario Hydro is under way. As an organization, our people are taking stock of our structure and facilities to find ways to operate more efficiently, and in ways that help sustain the environment. As an energy service company, we are expanding and diversifying our programs to help customers in all sectors get more value for their energy dollars. As a publicly owned utility, we are building partnerships with industry, government and consumers to help Ontario benefit from energy efficiency and renewable technologies that can also be exported to help other countries in their efforts to sustain the environment. And as a corporate citizen, Ontario Hydro is committed to helping Ontario become a world leader in energy efficiency, competitiveness and sustainable development.

Playing a leading role in Ontario's future is not new for Ontario Hydro. The corporation has provided an affordable, reliable supply of electricity to homes and businesses for most of this century, helping to raise the standard of living in the process. It will

also have a leading role in the next century, in an Ontario where energy, development and the environment exist in harmony.

Ontario Hydro is recognized for its innovative programs to promote energy efficiency in buildings, factories and homes. We are now tailoring energy services more closely to individual

needs, promoting world-leading standards for energy efficient construction processes and products, and creating partnerships in every sector of the economy to help people live and work with energy efficiency in mind. Many of our environmental efforts and standards already meet the provisions of "Agenda 21", as set out at the 1992 Earth Summit. With that as our target, we are developing our own agenda - Hydro 21 - to consider the options for Ontario Hydro in the next century.

**ACROSS THE CORPORATION IN 1992, WORK UNITS AND INDIVIDUAL EMPLOYEES PUT PRACTICAL IDEAS TO WORK, IMPROVING EFFICIENCY AND HELPING PRESERVE THE ENVIRONMENT. A WORK UNIT IN ONTARIO HYDRO'S CHERRYWOOD DISTRICT CONCEIVED AND DESIGNED A METAL CUBE TRAILER FOR USE IN CONTAINING POLYCHLORINATED BIPHENYL (PCB) SPILLS. THE TRAILER CONTAINS THE EQUIPMENT NEEDED FOR HANDLING A SPILL EMERGENCY, AND CAN BE TRANSPORTED QUICKLY TO ANY SITE.**

There is much more to be done if the transition of our company to a sustainable future is to succeed. It requires a long-term commitment to change the way we think and operate. Inevitably, there will be disruptions and resistance in some quarters. But the people of Ontario Hydro have shown that they are ready to bring about change in their company.

### THE CORPORATE YEAR IN REVIEW

While Ontario Hydro improved operating efficiency and environmental performance at specific facilities and units in 1992, and helped more customers and consumers improve their energy efficiency, it was a year of upheaval.



The corporation confronted costs during the year, and took steps to arrest future cost growth. Measures included spending and hiring restraints and significant savings by the operating branches. Excluding the unbudgeted costs of 1,400 voluntary staff retirement and severances, and the write-off of some Demand/Supply Plan costs, operations, maintenance and administrative (OM&A) program costs were \$46 million less than the budgeted amount, while 1992 capital costs were \$630 million under budget.

Cost control was important in 1992 because energy sales declined and net income fell below expectations. A weak economy and unusual weather conditions caused the total demand for electricity in 1992 to fall from 1991. Sales of 130 million megawatt-hours of energy were 2.1 per cent lower than 1991. An 11.8 per cent average rate increase in 1992 helped boost revenue by 8.9 per cent to \$7,768 million. Though net income of \$312 million was higher than either 1990 or 1991, it was about \$183 million lower than budgeted, primarily because of lower sales.

It became clear in 1992 that some generating capacity and planned electricity purchases would not be necessary as Ontario Hydro lowered its projections of future demand. The corporation decided not to build generating capacity it did not need, or purchase electricity it could not sell. With new generating capacity coming into service at Darlington, however, a 3,500-megawatt surplus of generating capacity would exist during the mid-1990s.

Consequently, planned capital expenditures and contracts worth more than \$7 billion over the next 10 years were delayed or cancelled in 1992.

In December, a \$13 billion contract to buy 1,000 megawatts from Manitoba Hydro, beginning in the year 2000, was cancelled along with a major associated transmission line. Earlier, hydroelectric generation projects at Patten Post and Little Jackfish in northern Ontario were deferred for 10 years. Also, a decision was made to shut down four thermal units at the Lakeview Generating Station. Energy management programs costing about \$1 billion were deferred until after the end of the decade, though momentum on energy efficiency services will be maintained in the long term. And 1,000 megawatts of non-utility generating capacity scheduled to come on line between 1994 and 1997 were put on hold, pending a complete review of both short and long-term supply needs.

**ONTARIO HYDRO'S HIGHEST  
RECOGNITION OF ACHIEVEMENT, THE  
SIR ADAM BECK AWARD, WENT TO  
JORDON CHOU FOR HIS WORK IN  
DEVELOPING COMPUTER SIMULATORS  
FOR EFFICIENT AND EFFECTIVE  
TRAINING OF POWER STATION  
OPERATORS SERVING THE CORPORATION  
AND ITS INTERNATIONAL CLIENTS.**



## A MORE EFFICIENT ONTARIO HYDRO

The roots of the new Ontario Hydro began to grow in 1992, as management and staff took innovative and firm approaches to meet financial and technical challenges.

- Executive salaries were frozen and CUPE Local 1000 staff agreed to hold increases to one per cent in 1992. During the year, the Society of Professional and Administrative Employees committed to seek no salary increase in 1993.
- An improved system for planning maintenance outages for nuclear reactors enabled work on one

unit at the Bruce "A" Nuclear Generating Station to be completed in 40 per cent of the time originally planned. Savings totalled \$3 million.

- Savings from a Materials Management program were estimated to be \$29 million at the end of 1992. The program is designed to help the corporation standardize the items it purchases and minimize the "life cycle" costs of

materials, from efficient selection and storage, to prompt utilization and responsible disposal. During the year, work began on criteria for a "Buy Green" program to help minimize the environmental impacts of future materials purchases.

- Another dimension of the Materials Management program, electronic data interchange (EDI), was established with key suppliers in 1992 to reduce the cost of supplying stock materials to generating stations. EDI enables nuclear and thermal generating stations to electronically order materials directly from supplier inventories, saving paper, eliminating administrative procedures and transferring warehousing costs to suppliers.

- A new portfolio of flexible, short-term fuel contracts was put in place to provide more price competition, and a more secure and flexible supply, all at lower costs. New Western Canadian coal contracts will save Ontario Hydro about \$80 million per year beginning in 1993.
- Ontario Hydro staff made progress in the quest to eliminate paper forms, by studying the possibility of producing all of Hydro's forms from computers as they are needed, rather than printing and storing hundreds of blank forms for future use. Electronic forms could save the corporation as

much as \$12 million annually, and enhance administrative productivity.

- Remote computer terminals were installed at the corporation's five regional operating centres. Operators are now able to see at a glance how much power the key transmission equipment in their regions is handling. This improvement is ex-

pected to enhance system reliability and reduce maintenance costs.

## AN EQUITABLE EMPLOYMENT ENVIRONMENT

Employment equity was not heard of when William Peyton Hubbard served as a Toronto City Councillor between 1894 and 1908. Re-elected on his achievements in public office, Hubbard was a staunch supporter of public utilities, and earned praise from his close ally, Adam

Beck, in the creation of Ontario Hydro in 1906. Hubbard also happened to be black, and to honour his memory and the contribution that the black community has made to this province, Ontario Hydro announced the William Peyton Hubbard Memorial Education Award program in 1992. Each year, two black students attending community college or university will be awarded one year of tuition annually, and an opportunity for summer employment at Ontario Hydro.

Today, the company that Hubbard helped create is committed to removing physical and attitudinal barriers to employment and advancement opportunities for minorities, women and disabled people, to create a workforce that represents Ontario's diverse population.

**AGAIN IN 1992, ONTARIO HYDRO EMPLOYEES PLEDGED MORE THAN \$1 MILLION TO THE UNITED WAY TO HELP THE LESS FORTUNATE IN THEIR COMMUNITIES. THE CAMPAIGN RAISED \$1.2 MILLION IN PLEDGES FROM EMPLOYEES FOR THE HUNDREDS OF LOCAL CHARITIES ACROSS ONTARIO THAT BENEFIT FROM THE UNITED WAY.**





In the past four years, Ontario Hydro's energy management programs have helped customers cut an estimated \$260 million from their electricity bills.

## ENERGY EFFICIENCY AND COMPETITIVENESS

**O**f the environmental "three Rs", reduce is the first and perhaps the most important. When industry and consumers use less energy to get things done, our customers and our economy become more competitive. And when less energy needs to be produced, there is less effect on the environment. So Ontario Hydro helps households and businesses eliminate their unproductive use of electricity, improving competitiveness and productivity. This way, Ontario's electricity system serves customers as efficiently as possible.

In just four years, Ontario Hydro has helped customers reduce their demand for electricity by more than 800 megawatts, or enough electricity to power the city of Ottawa. More than \$260 million has been cut from customers' electricity bills, saving Ontario Hydro generating costs, and reducing the need to invest in new sources of supply.

Ontario Hydro has helped the demand for energy efficient products and services increase, creating related economic opportunities. The number of service companies in Ontario helping businesses improve energy efficiency has grown five-fold since 1989. Ontario Hydro has also helped the demand for energy efficient products grow dramatically at the retail level. Over 90 per cent of Ontario's major retailers now stock energy-saving light bulbs, and Ontario Hydro's Power Saver\* month in October helped 2,000 retail stores across Ontario sell more than two million residential energy efficient products.

1992 was an energy efficient year in other ways too:

- In March, Ontario Hydro's Home Power Saver\* program was launched with municipal utilities to help Ontario's 2.4 million householders analyze and then improve their home energy efficiency.

- Ontario Hydro Research helped home owners with electric heat reduce their energy use by equipping test homes with monitoring devices that display the electricity consumption of individual appliances. Electricity savings averaging 12 per cent were achieved.
- The New Building Construction program was introduced to help contractors meet new continent-wide energy efficiency standards coming into effect in 1993.
- Ontario Hydro continued to help companies improve their energy efficiency and competitiveness. Notably, the QUNO Corporation will save an estimated \$2.6 million annually by shifting some of its production to nights, when electricity is least expensive, and increasing the quantity of recycled fibre in its newsprint with a new pulping facility in Thorold.
- Communities continued to convert to energy efficient streetlighting with help from Ontario Hydro's "Streetsmart" program in 1992. Now more than half of Ontario streetlighting is either energy efficient, or in the process of being converted. In just two years, this program has saved enough electricity to power a town the size of Penetanguishene.
- Ontario Hydro completed a two-year research project in 1992 and helped the northern town of Espanola improve its energy efficiency. Some 86 per cent of the citizens and businesses got involved in improving most facets of energy efficiency, generating electricity savings that are expected to reach 17 per cent annually.

\*Official mark of Ontario Hydro

## MESSAGE FROM THE PRESIDENT

**T**o say that the world has changed in the past few years is an understatement. Governments, businesses and individuals have all had to face the disruption and uncertainty of changes occurring in the environment around us.

Ontario Hydro has not been immune to these changes. We've

watched our sales of energy shrink steadily since 1989, while the costs of operating our electricity system have risen. We're adding 3,600 megawatts of capacity with no immediate prospects to sell it. Customers are rightfully concerned about increases in the price of our product beyond the rate of inflation in the face of soft demand and rising costs. Some fear it will affect the competitiveness of Ontario industry.

These concerns matter to all at Ontario Hydro, and none more so than the people who operate and maintain the electricity system which serves Ontario's homes and businesses. To provide the competitive and environmental advantages Ontario needs for the twenty-first century, Ontario Hydro must have an electricity system that operates reliably, efficiently and flexibly.

So improving Ontario Hydro's electricity system is our most important operations goal. Despite cost cutting and budget deferrals that affected the entire corporation in 1992, operations built momentum



toward this goal by shifting the focus of engineering and technical expertise from new construction to existing facilities, and by making technical operating improvements throughout the system.

Production efficiencies improved through nuclear reactor rehabilitations, thermal combustion changes

and enhanced hydroelectric output. The transmission system was strengthened by cost-effectively replacing or rebuilding key components and equipment. And environmental performance improved through lower air emissions from thermal generating stations, and reduced use of herbicides.

These improvements, and others outlined in the Operations Year in Review, are tangible steps forward. But Ontario Hydro's transition to a more flexible and efficient energy service company will involve significantly more changes to the way we operate in the years ahead. And though major change is unavoidably disruptive, I am encouraged by the number of employees who have told me that they recognize the need for change and look forward to getting on with the job. No transition can succeed without that.

Allan Kupcis  
*President*



## OPERATIONS YEAR IN REVIEW

### IMPROVING ONTARIO'S ELECTRICITY SUPPLY

Each year, the men and women who produce and deliver Ontario's electricity face a formidable challenge: maintaining Ontario Hydro's record of providing a reliable, reasonably priced supply of electricity.

Ontario Hydro met that challenge in 1992, while improving system reliability, operating efficiency and environmental performance. During the year, the corporation made progress upgrading its hydroelectric, thermal and nuclear generating facilities, and its transmission system, through new construction, rehabilitation and repair work, and organizational improvements.

In the first quarter of 1992, a major restructuring of the former Design and Construction Branch focused technical expertise from new construction projects directly on improving the performance of Hydro's existing power system and helping reduce operating costs.

#### SOURCES OF ELECTRICITY

*millions of megawatt-hours*



Renamed the Engineering and Construction Services Branch, it now consists of 11 strategic business units, which serve specific generating and transmission facilities across the system. Under the new structure, regular and non-regular staff levels are expected to decline by more than 20 per cent by the end of 1993, while employment of construction trades people will be reduced by half.

### THE NUCLEAR GENERATING SYSTEM: IMPROVED PERFORMANCE, MORE CAPABILITY

The performance of Ontario Hydro's nuclear units was generally good in 1992, with 10 of 18 in-service reactors achieving capability factors of more than 75 per cent, and five units at more than 90 per cent. Including planned outages of reactors for maintenance and rehabilitation work, the overall capability factor for nuclear stations was 64 per cent, as nuclear generating stations produced 66.6 million megawatt-hours of electricity, or 48.9 per cent of total system energy, down 6 per cent from the previous year.

At the Darlington Nuclear Generating Station, vibration problems, which were causing fuel damage, were corrected during 1992. By the end of the year, reactor units 1 and 2 were operating at full power, and the third unit was producing power in the final stages of being commissioned for service. The fourth and final unit is expected to begin producing electricity in 1993. At full production, Darlington will generate about 3,500 megawatts, or about 17 per cent of total provincial electricity demand.

Performance improved at the Pickering Nuclear Generating Station in 1992 following pressure tube replacements and equipment rehabilitation completed over the past few years in reactor units 1, 2 and 3 of station "A". These units operated at more than 80 per cent of full capability. The fourth retubed unit is scheduled to return to service in 1993.

In March 1993, Ontario Hydro deferred its decision to retube the four units at the Bruce "A" Nuclear Generating Station. These units will continue to operate as long as safety permits. The Bruce "B" Units 5, 6, 7 and 8 continued to operate well in 1992, posting a

combined capability of 78 per cent.

Over their lifetime, the newer "B" generating units at Pickering and Bruce operated at a net capability of 86 per cent, or about 6 per cent higher than the older "A" generating units at the same stage in their life. Overall, the nuclear generating system operated at 64 per cent capability in 1992. An improved system for estimating the time required for reactor outages was implemented during the year, cutting the need for unplanned extensions of outages by more than 50 per cent.

#### THE THERMAL GENERATING SYSTEM: LOWER EMISSIONS AND HIGHER RELIABILITY

Ontario Hydro's thermal, or fossil-fuelled, generating stations took advantage of a reduced load created by declining demand for electricity in 1992, to make operating and environmental improvements. Still, the thermal stations at Atikokan, Thunder Bay, Lakeview, Lambton, Nanticoke and Lennox produced 28.2 million



Greg Hutchinson and Ron Witherspoon help Ontario Hydro maintain its reputation for reliability, with average annual power interruptions to customers among the fewest and briefest in North America.

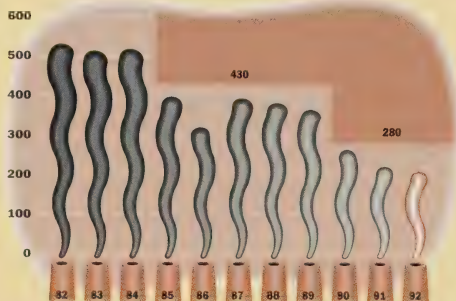
megawatt-hours of electricity, or 20.7 per cent of total system energy. Moreover, the thermal system kept acid gas emissions more than 25 per cent lower than the Ministry of the Environment limit in 1992 while maintaining the availability of thermal units for electricity production at 91 per cent, the highest level in almost a decade.

During the year, work continued on the installation of "scrubbers" on units 3 and 4 at the Lambton Generating Station. When the scrubbers begin operating in 1994, they will help to remove sulphur dioxide from emissions, producing gypsum as a by-product that can be sold for the production of wallboard used in construction. In 1992, an energy conversion optimization system was implemented at Lambton and at Lakeview Generating Station Units 5 and 6, to improve diagnostic capability of the stations while its units are in operation. The system has helped improve unit operating efficiency. Another program at Lambton improved the efficiency of the combustion process, saving \$1 million in fuel costs.

#### ONTARIO HYDRO ACID GAS EMISSIONS

1982-92 emissions ('000 tonnes)

■ Acid Gas Regulation Limits



Environmental initiatives were also productive at the Nanticoke, Atikokan, Thunder Bay and Lennox



Generating Stations during the year. At Nanticoke, a program to reduce windblown ash proved successful, after long-term emissions monitoring by the Ministry of the Environment. At Atikokan, the Ministry authorized the removal of air monitoring stations because air quality has not been affected since the station went into service in 1985. Long-term emissions monitoring of an earlier expansion to the Thunder Bay Generating Station showed an improvement in local air quality and no discernable deterioration in water quality. And an agreement was negotiated with Falconbridge Ltd. during the year to recycle ash from the Lennox Generating Station, which will remove nickel content and eliminate the need for ash disposal.

## **HYDROELECTRIC GENERATION IN 1992: RENEWAL AND IMPROVED OUTPUT**

Hydroelectric power, the first major source of electricity in Ontario, today provides more than one-quarter of total system power. In 1992, Ontario Hydro's 69 hydroelectric generating stations contributed 36.5 million megawatt hours to the system, at the lowest unit cost compared to nuclear and thermal generation. But the hydroelectric generating stations and 262 associated dams and structures have an average age of 55 years, and some units have had no overhauls in more than 35 years. To ensure that the Ontario Hydro system maintains its sources of efficient, renewable hydroelectric power well into the next century, the corporation began restoration and upgrading work on the system in 1992. One hundred and thirty-two hydroelectric units are scheduled for overhauls in the next 15 years to preserve and enhance these valuable resources.

Crystal Falls Generating Station and Kaminiskag Lake Control dam were upgraded under the Dam

Structure Assessment program to ensure that they remain structurally sound and continue to provide reliable service. Restoration work also began on the Coniston dams, for completion in 1993. Another dimension of Ontario Hydro's renewal program for its hydroelectric system is an initiative to increase the output of existing hydroelectric stations. Output was increased at Abitibi Canyon Generating Station in northern Ontario, and at R. H. Saunders Generating Station on the St. Lawrence River in 1992.

## **THE TRANSMISSION SYSTEM: COST EFFICIENT IMPROVEMENTS**

Like the hydroelectric system, many of the high voltage lines, transformers and switching stations that bring electricity to Ontario Hydro's customers have provided reliable service for decades. To enable these assets to continue serving the needs of customers for decades to come, a transmission rehabilitation program began in 1992.



Employees are Ontario Hydro's best source of ideas to improve productivity. Fraser Grant, Ray Lee and Diane Lawrence are participating in quality improvement teams, which will help to change the way the corporation operates.

The emphasis of the program is to rebuild rather than to replace. By selectively replacing parts and rebuilding equipment, system life is extended and reliability enhanced at a fraction of the cost of complete replacements. For example, more than \$10 million will be saved by replacing parts of "spacer-dampers" along 500-kilovolt lines, rather than entire units, yet the reliability of the lines will be equally enhanced. Similarly, major transformer station equipment, such as circuit breakers, transformers and relay equipment, are being rebuilt rather than replaced. Ontario Hydro expects that more than three-quarters of its equipment can be economically rebuilt at as little as half the cost of new equipment.

In the northwestern area of the province, a pilot project helped develop improved techniques and equipment for keeping transmission line routes clear of brush. Ontario Hydro's Northwestern Region initiated a two-year study in June by cutting herbicide spraying by 60 per cent along the 3,100 hectares of transmission and distribution rights-of-way in the region. The study is part of Hydro's multi-year corporate program to find alternative ways of managing vegetation growth. Alternatives being studied include manual and mechanical brush control, grubbing and cover crops, and practical use of the land under transmission lines, such as farming and other activities that minimize maintenance costs.

**ONTARIO HYDRO EMPLOYEES PROVIDED EMERGENCY HELP TO FELLOW CITIZENS IN NEED DURING THE YEAR. QUICK REACTION BY TWO POWER LINE MAINTAINERS, AL FEHRMAN AND BLANE GOLDING, ENABLED THEM TO RETRIEVE A PARTLY SUBMERGED CAR AND FREE THE TRAPPED DRIVER BEFORE THE VEHICLE DRIFTED TO DEEPER MOVING WATER IN A FLOODED AREA NORTH OF TORONTO. HARVEY ATCHISON, A CLINTON-AREA METER READER, ALERTED AN AMBULANCE AND APPLIED FIRST AID TO AN INJURED VICTIM AFTER COMING ACROSS A CAR ACCIDENT IN WESTERN ONTARIO.**

## NON-UTILITY GENERATION: A FLEXIBLE SUPPLY OPTION

In 1992, Ontario Hydro purchased 2.96 million megawatt-hours of electricity (a 45% increase over 1991) from non-utility, or privately owned facilities, which most frequently produce electricity from renewable resources or natural gas. That's almost 750

megawatts of capacity from 73 independent projects, or enough capacity to power the cities of London, Kingston and North Bay. During 1992, commitments were made to an additional 214 megawatts, which are expected to be in operation by 1995.

But with a surplus of generating capacity, Ontario Hydro made the only responsible decision it could in 1992: it put a hold on 66 proposed non-utility generating projects for which Orders-in-Council had not been received, at least until a review of future needs has been completed. Early in 1993, Ontario Hydro lifted the freeze on 50 small non-utility generation proposals under

five megawatts. Purchasing non-utility power before it is required would add needlessly to system costs and to the price of electricity.

Though Ontario Hydro rates are still competitive with those across North America, its traditional competitive advantage has been largely eliminated by steep increases in rates requested in recent years to accommodate new Ontario Hydro generating facilities. This spurred some large customers to consider building their own generating sources, an attractive alternative for municipalities with customer

bases that could support such a venture. A task force with representatives from Ontario Hydro, municipal utilities and the provincial government was established in 1992 to address associated issues.

Of importance is the fact that if larger municipal utilities leave the Ontario grid, ratepayers of remaining utilities must bear the fixed costs of Ontario's generating and transmission system.

### WORKING SAFELY

Ontario Hydro did not meet its goal of zero fatalities on the job in 1992. Regrettably, two employees and one contractor lost their lives. To reduce the risks involved in generating and delivering electricity, Ontario Hydro managers, employees and union representatives formed Joint Health and Safety committees at each job site across the province. Fully trained in safety, and vested with the power to halt unsafe work at any site, the task of each committee is to recognize hazards and swiftly implement corrective measures.

During the year, work continued on practical safety improvements, including the installation of permanent fall-arresting systems on frequently climbed transmission line towers. Overall, the time lost to accidents at Ontario Hydro declined by 10 per cent in 1992. But the most important number is still zero, because all fatalities and injuries are preventable and none are acceptable.

### THE INTERNATIONAL DIVISION OF ONTARIO HYDRO

There is a large and growing demand, particularly in developing countries, for the experience and expertise of Ontario Hydro in the generation, transmission and distribution of electricity as well as in environmental matters, energy efficiency and research. In responding to this demand, Ontario Hydro opens up new opportunities for the profit-



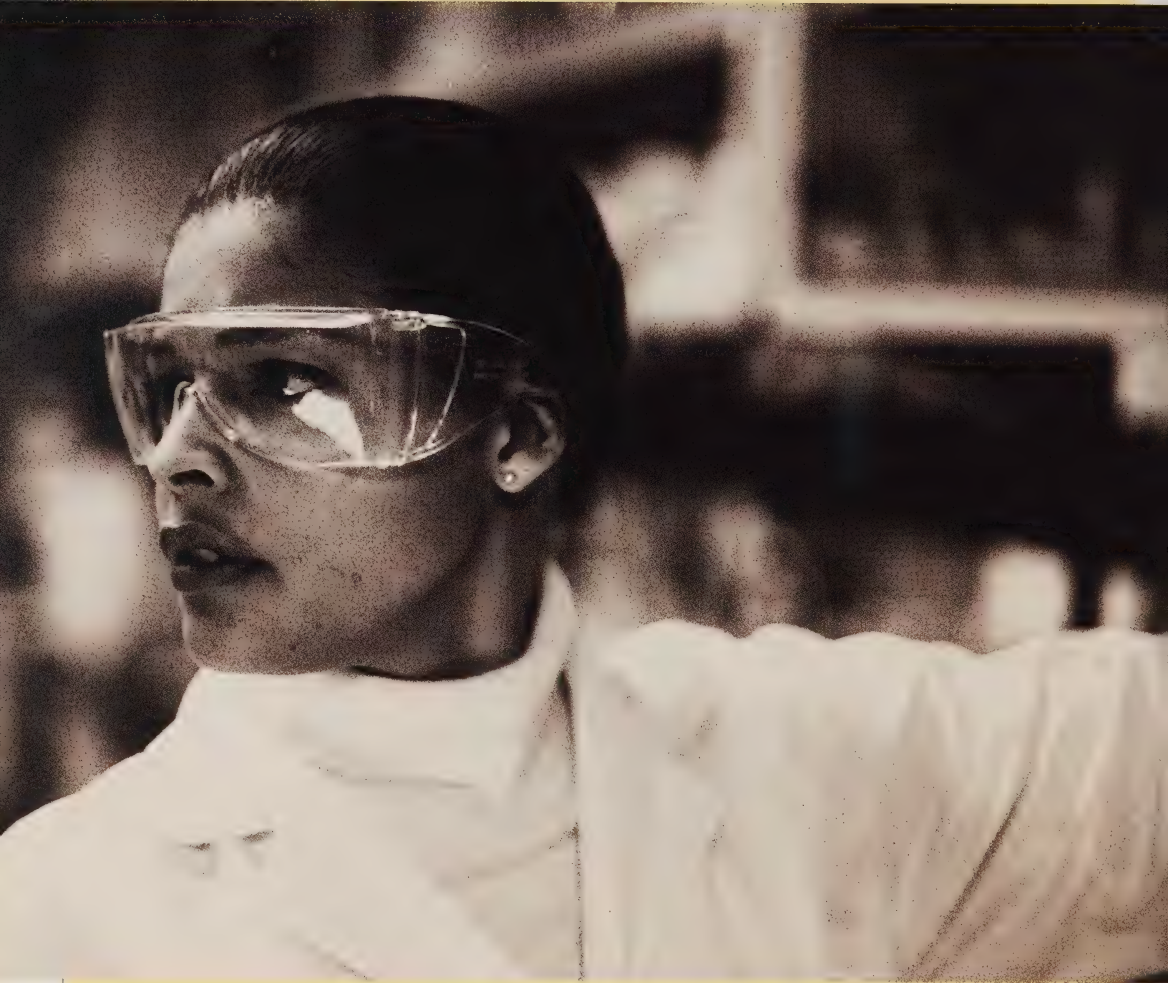
Ontario Hydro increased its purchases of independently generated electricity by 45 per cent in 1992, including 110 megawatts generated by TransAlta Energy Corp. in Mississauga. Allen Skoreyko of TransAlta Energy Corp. and Ontario Hydro's Keith Rawson.

able employment of its own professional personnel and for Canadian industrial and services firms.

In 1992, Ontario Hydro's New Business Ventures Division became Ontario Hydro International to better convey the fact that Ontario Hydro will actively promote its people and services, and those of other Ontario companies, to the world market in the years ahead. Last year, OHI was awarded 67 new contracts in 20 different countries, contributing \$7 million in net income on \$50 million in revenue, a 40 per cent increase in income over 1991.

OHI helps Ontario businesses in energy-related fields grow, not only through export opportunities, but through related investments as well. In 1992, OHI made its first equity investment in IRIS Power Engineering Inc. of Mississauga, Ontario. The equity partnership will transform research prototypes into practical commercial products and technologies that can be marketed around the world, boosting Ontario jobs and creating export income.





During 1992, Ontario Hydro spent an estimated \$510 million to manage emissions, wastes and land use, and to seek environmental approvals.

## ENVIRONMENTAL PERFORMANCE

One of Ontario Hydro's most important goals is to become a recognized environmental leader. We are taking steps to integrate more fully the environment into our decision-making processes and we are conducting an in-depth evaluation of Ontario Hydro's environmental programs based on "Agenda 21", the international action plan on environment and development agreed to at the Earth Summit in Rio de Janeiro.

An Environmental Leadership Task Force selected from managers across Ontario Hydro produced a plan to establish accountability for environmental management at all levels of the corporation, recognize environmental performance, educate and train employees in environmental matters and foster innovative approaches to environmental problems.

During the year, an estimated \$510 million was spent to manage emissions, wastes and land use, and to seek environmental approvals. Progress was reported on several fronts:

- Ontario Hydro developed a set of scientific models that interpret the effects of air emissions from fossil-fuelled generating stations on crops, building materials, lake acidity, forests, waste production and human health. This is an important step in taking responsibility for managing the full impacts of fossil-fuelled operations beyond government emission limits, and will provide better environmental information to decision makers.
- Ontario Hydro advanced the concept of emissions trading as an economic incentive to reduce emissions more cost-effectively than regulations based on emission limits. Ontario Hydro, federal and provincial government ministries, major industrial associations and a university jointly commissioned

a study into the use of emissions trading to reduce nitrogen oxide emissions in the Windsor-Quebec corridor. The study found that the cost of cutting emissions could be reduced by up to 40 per cent through a system of emission rights trading.

- In April, Ontario Hydro sponsored events at various locations to raise employee awareness of the depletion of the earth's ozone layer from such chemicals as chloro-fluorocarbons (CFCs) used in refrigeration. The events helped mark Earth Day on April 22, an international environmental day.
- Work began on the development of a chemical process for the destruction of CFCs and halons that contribute to atmospheric ozone problems. Initial tests showed that it is possible to safely destroy these gases.
- Ontario Hydro continued to fund electric and magnetic field (EMF) research, monitor other study results and respond to public inquiries about electric and magnetic fields. Sources of EMF include electric power generation, transmission and distribution systems and the use of appliances and electrical equipment. In 1992, the corporation spent almost \$2 million on research, response and maintaining expertise on this subject. Reviews and inquiries by scientific panels and health agencies have concluded that a health risk from exposure to power frequency electric and magnetic fields has not been established; however, there is a recognition that further research is desirable. The corporation is contributing \$4.2 million towards a \$10 million dollar research program, which combines occupational, public health and laboratory studies. Results of these studies are expected over the next three years.





“**A**genda 21” is an action plan that recognizes the right of human beings and nations to pursue economic development, while respecting the environmental needs of present and future generations.

## LOOKING AHEAD

### AN INTERNATIONAL COMMITMENT TO A SUSTAINABLE WORLD

In June 1992, more than 100 heads of state, and thousands of representatives from government and non-government organizations, met in Rio de Janeiro for the United Nations Earth Summit. What brought so many nations together was the realization that "business as usual" is no longer a sustainable option in a world with growing economies and finite resources. Participants recognized that economic development without regard for preserving the environment cannot continue without catastrophic results for current and future generations.

The Earth Summit produced a historic international accord called "Agenda 21". It is an action plan that recognizes the right of human beings and nations to pursue economic development, while respecting the environmental needs of present and future generations. Agenda 21 covers more than 40 major developmental and environmental issues, from air quality and nuclear safety, to poverty and aboriginal rights. In short, it is a blueprint for sustainable development — the balancing of economic activity with responsible nurturing of the environment we all share.

The principles of sustainable development are the principles of sound business practice and competitive advantage: waste and inefficiencies are eliminated; companies avoid the costs and disruptions of environmental controls by developing efficient ways to operate with minimal environmental impact; renewable, clean technologies can be

developed and marketed; and just as important, the task of sustaining the environment becomes an integral part of every job, program and lifestyle, not an afterthought or a costly cleanup.

As important as Agenda 21 is, it will only succeed through the efforts of governments, businesses and people who are committed to the principles of sustainable development and who seize competitive advantages from those principles. So the challenge that the United Nations Earth Summit set before the world is to transform Agenda 21 into reality in the years and century ahead. The people of Ontario Hydro accept that challenge.

In the new century approaching, a more populated and developed world will place even greater de-

mands on the earth's resources, particularly to provide energy for growing economies. Electricity, the world's most widely harnessed form of energy, will be needed to power an even wider array of conveniences, computer applications, industrial processes and transportation. How we produce and use the energy we need in the next century will not only determine how well we all live, but whether the environment we share continues to sustain us.

If future generations are to have opportunity and fulfilment, it is the responsibility of organizations like Ontario Hydro to lead the way by becoming models of efficiency and environmental preservation to the world.

**SUSTAINABLE DEVELOPMENT IS AN APPROACH TO GROWTH THAT WILL HELP PROTECT AND ENHANCE THE QUALITY OF LIFE ON OUR PLANET. IN THE WORDS OF THE WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, SUSTAINABLE DEVELOPMENT IS GROWTH THAT "MEETS THE NEEDS OF THE PRESENT WITHOUT COMPROMISING THE ABILITY OF FUTURE GENERATIONS TO MEET THEIR OWN NEEDS".**

## "HYDRO 21": CHOICES FOR A SUSTAINABLE FUTURE

**E**conomic and environmental leadership and unparalleled customer service will be the cornerstones of Ontario Hydro operations in the future. But before a changed Ontario Hydro emerges, it is important that the people and enterprises of Ontario understand the issues and options facing the corporation in the next century.

"Hydro 21", a discussion paper about the corporation's future options, has been created to spur

dialogue in meetings between the Chairman and employees, customers and community leaders across Ontario. Ideas and opinions from all of these stakeholders are helping chart the corporation's transition to an energy service company. All parts of Ontario Hydro's structure, programs and activities are being examined, including the manner in which electricity prices are determined or adapted to market situations.

There are a lot of options to consider for Ontario Hydro's future because the corporation is, in effect, many companies. It is an electricity generator; a transmitter of bulk electrical energy to other utilities; a distributor to retail accounts; a provider of energy efficiency programs and information; a research company; and an international consulting



Chairman Maurice Strong discusses Ontario Hydro's future options with employees at one of his roundtable meetings held across the corporation. Roundtables were also held with customers, community representatives and interest groups.

business. All of these businesses are Ontario Hydro, yet each might operate independently, and as publicly or privately owned entities.

Changing technology also presents options to consider. Renewable generating technologies such as fuel cells, which transform hydrogen cleanly into electricity, solar energy and biomass generation, could complement the economies of scale from large central generating stations with smaller, flexible sources

built closer to the demand. They hold the potential not only for a cleaner environment, but also for new industries and jobs in Ontario.

What is emerging from all of these deliberations is a future direction for Ontario Hydro. One that is financially sound, focused on its customers, and an engine of sustainable economic development and competitiveness. Such an energy service company will encourage energy efficiency and attract energy efficient, high technology customers to Ontario. And most important of all, it will be powered by a motivated workforce unrivaled in capability and ideas.



FINANCIAL SECTION



In 1992, net income improved over the previous year, despite unfavourable economic and operating conditions.

## FINANCIAL REVIEW AND ANALYSIS

for the year ended December 31, 1992

## FINANCIAL HIGHLIGHTS

1992 marked a year of continuing challenge for Ontario Hydro as the corporation continued to respond to unfavourable economic and operating conditions brought on by the recession, cost pressures and the need to improve generation performance. Despite these factors, net income for the year improved over 1991. To ease cost and rate pressures, and in response to lower load growth and a projected surplus in generation capacity, significant cuts to capital programs were announced during the year and, in addition, Ontario Hydro has held salary increases for employees and cut specific operating budgets.

Total revenues for the year were \$7,768 million, an increase of \$625 million over 1991. The higher revenues resulted mainly from an average 11.8 per cent increase in the price of electricity. The recession, however, continued to affect demand for electricity in Ontario, resulting in a 2.1 per cent decline in the volume of electricity sales to all customers.

Total operating costs for 1992, including financing charges, amounted to \$7,456 million, a \$517 million increase over 1991. The increase reflected the costs associated with placing new facilities in service, higher program costs for the restoration and maintenance of operating facilities and a provision for the estimated costs associated with voluntary staff reduction programs announced during the year, partially offset by the impact of cost-cutting measures implemented in 1992.

Net income for 1992 was \$312 million, an increase of \$108 million from 1991.

Capital expenditures for investment in fixed assets during 1992 amounted to \$3,527 million, reflecting work on the remaining three units under construction at the Darlington Generating Station, rehabilitation work at other generating stations, and construction of transmission and distribution facilities. In 1991, capital expenditures for investment in fixed assets was \$3,934 million.

Cash provided from operations and available for investment in fixed assets increased to \$1,691 million in 1992, up from \$1,381 million in 1991. Proceeds of \$5,863 million were received from three domestic and two global Canadian dollar bond issues, and the issuance of short-term notes. After repayment of outstanding debt, net borrowing amounted to \$1,784 million.

## RESULTS OF OPERATIONS

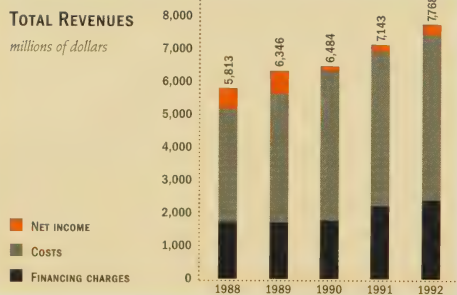
## REVENUES

Primary revenues for 1992 amounted to \$7,712 million, an increase of 8.9 per cent or \$631 million over 1991, due mainly to an average 11.8 per cent increase in the price of electricity in 1992.

Electricity sales to Hydro's three classes of primary customers – municipal utilities, rural retail customers and direct industrial customers – totalled 128,349 million kilowatt-hours, a 2.0 per cent decrease from 1991. The decrease in the volume of sales to all primary customers reflected the impact of the recession, milder weather conditions and demand management programs.

Secondary revenues of \$56 million, mainly from exporting surplus energy to utilities in the United States, decreased \$6 million in 1992 reflecting a lower market demand and a lower availability of energy for secondary sales.

**TOTAL REVENUES**  
millions of dollars





## TOTAL OPERATING COSTS

Ontario Hydro's total operating costs for 1992, including financing charges, were \$7,456 million, \$517 million higher than in 1991. The increase was due mainly to the costs associated with placing new facilities in service and higher costs to maintain and restore aging generation and transmission facilities to ensure continued long-term reliability. The increase also reflected a \$126 million provision for the estimated costs associated with voluntary staff reduction programs. In addition to the staff reduction programs, other announced cost control initiatives included hiring freezes and cuts to specific operating budgets.

### Operation, Maintenance and Administration

To deal with an unfavourable economic climate and increasing rate pressures, Ontario Hydro announced several initiatives aimed at controlling the level of operation, maintenance and administration costs while adhering to our commitments to maintaining system reliability, environmental initiatives and financial soundness.

In 1992, operation, maintenance and administration costs amounted to \$2,246 million, an increase of \$209 million over 1991. This increase mainly reflected a \$126 million provision for the estimated costs associated with the voluntary staff reduction programs announced in September 1992, and a \$49 million write-off of the capitalized Demand/Supply Plan hearings costs as a result of the termination of the hearings. The increase also reflected higher program costs for the restoration and maintenance of operating facilities and higher demand management program costs, partially offset by the impact of cost reduction measures implemented in 1992. Excluding the impact of the provision for staff reduction programs and the write-off of Demand/Supply Plan hearings costs, operation, maintenance and administration costs for 1992 were below budget as a result of cost reduction measures.

### Fuel Used for Electric Generation

The 1992 fuel used for electric generation, comprising of the costs for coal, uranium, oil, water rental payments other than to the Province of Ontario and costs related to the Nuclear Agreement - Payback, came to \$1,137 million, a \$15 million increase over 1991. The increase reflected a relatively higher level of fossil generation as a result of higher planned maintenance outages at nuclear generating stations.

### Power Purchased

In 1992, electricity purchases increased \$35 million to \$186 million, as a result of a higher level of non-utility generation purchases. Ontario Hydro purchased \$146 million of electricity from independent power producers located in Ontario and \$40 million from neighbouring utilities. The corporation is still a net importer of electricity, a trend that started in 1989. Hydro buys electricity when it is economical to do so and during periods of peak demand or in emergencies. Purchases are also sometimes used to manage acid gas emission levels. The corporation's acid gas emissions for the year were estimated at 222,000 tonnes, well within the provincial regulatory limit of 280,000 tonnes, which was unchanged from the previous year.

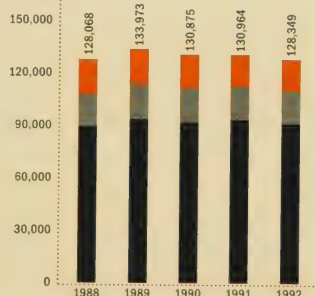
### Provincial Government Levies

Provincial government levies totalled \$270 million in 1992, an increase of \$18 million over 1991.

## PRIMARY ENERGY

millions of kilowatt-hours

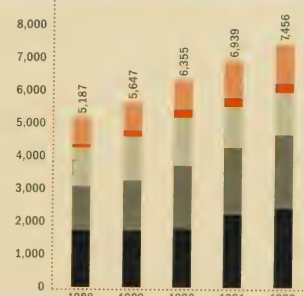
■ DIRECT  
■ RURAL  
■ MUNICIPAL



## TOTAL OPERATING COSTS

millions of dollars

■ DEPRECIATION  
■ PROVINCIAL GOVERNMENT LEVIES  
■ FUEL AND POWER PURCHASED  
■ OPERATION, MAINTENANCE AND ADMINISTRATION  
■ FINANCING CHARGES



Ontario Hydro is required to pay to the Province an annual debt guarantee fee of one half of one per cent on the total debt guaranteed by the Province outstanding on the preceding December 31. The fee for 1992 is \$161 million, up \$14 million from 1991.

Provincial water rental payments, related to the use of provincial waters by Ontario Hydro in the operation of its hydroelectric stations, amounted to \$109 million in 1992, an increase of \$4 million over 1991. The increased payments mainly reflected the impact of a higher level of hydroelectric generation.

In addition to provincial government levies, Ontario Hydro, similar to other businesses, also made payments of approximately \$262 million to various government agencies in 1992. This amount includes payments in lieu of taxes to municipalities, provincial sales taxes, Unemployment Insurance Commission premiums, Canada Pension Plan contributions and Employer Health Tax payments.

#### *Depreciation*

Depreciation charged to operations totalled \$1,198 million in 1992, an increase of \$62 million or 5.5 per cent over 1991. The increase resulted from depreciation costs related to capital additions, partially offset by changes in estimates related to fixed asset removal costs and service lives of transmission and distribution systems.

#### *Financing Charges*

Financing charges comprise interest charged to operations and foreign exchange costs. Interest charged to operations represents gross interest reduced by capitalized interest and interest earned on investments. By capitalizing interest related to assets under construction until the assets are placed in service, Ontario Hydro equitably allocates costs between current and future customers. Foreign exchange costs mainly represent the amortization of gains or losses on the principal amount of foreign debt.

Gross interest costs for 1992 amounted to \$3,782 million, an increase of \$196 million or 5.4 per cent over 1991. This increase is primarily related to additional funds borrowed during the year to help finance construction, maintenance and restoration programs. The increase was partially offset by the refinancing of debt, both at maturity and prior to maturity, at lower interest rates.

Interest and foreign exchange charged to operations rose to \$2,419 million in 1992, \$178 million or 7.9 per cent higher than in 1991. The increase was mainly due to interest charged to operations on debt related to new facilities placed in service during 1992, including Darlington Unit 1, which was declared in service in November 1992.

#### **NET INCOME**

Net income for 1992 was \$312 million, an increase of \$108 million over the 1991 level of \$204 million.

#### **EQUITY**

Ontario Hydro's total equity increased by the amount of net income to a year-end level of \$6,931 million. Included as equity are the accumulated debt retirement appropriations and the reserve for the stabilization of rates and contingencies. The Power Corporation Act requires Ontario Hydro to include in rates an appropriation for the retirement of debt. The Act also enables the corporation to include in rates an amount to contribute to, or withdraw from, a reserve for the stabilization of rates and contingencies. These amounts are accounted for as net income, and together they build equity for the corporation, enabling it to operate as a financially self-sustaining entity.

The debt retirement appropriation required by the Power Corporation Act for the year was \$446 million, necessitating a withdrawal of \$134 million from the reserve for the stabilization of rates and contingencies to cover that portion of the appropriation not covered by net income of \$312 million for the year. In 1991, the amounts were \$416 million and \$212 million, respectively, and net income was \$204 million.

#### **FINANCIAL INDICATORS**

The corporation's financial performance is monitored using two main indicators: interest coverage ratio and debt ratio.

The level of interest coverage measures the extent to which net income enables Ontario Hydro to meet its gross interest payments. An increase in the interest coverage ratio indicates a strengthening in the corporation's financial position. The level of interest coverage increased to 1.09 in 1992 from 1.06 in 1991, due mainly to the increase in net income.

The debt ratio measures the extent to which Hydro's assets are financed by debt. A reduction in the debt ratio indicates a strengthening in financial position, as a relative increase in equity provides additional financial flexibility. The debt ratio at the end of 1992 was 0.841, an increase from the 1991 ratio of 0.838, due mainly to the net increase in long-term debt used to help finance investment in fixed assets.

## CAPITAL EXPENDITURES AND FINANCING

### INVESTMENT IN FIXED ASSETS

Ontario Hydro invests in fixed assets to meet expected growth in the demand for electricity and to meet regulatory requirements. The total assets of the corporation at the end of 1992 were \$46,671 million, 87.2 per cent of which represented fixed assets in service or under construction. This relatively high percentage reflects the capital intensive nature of Ontario Hydro's business.

Capital expenditures for investment in fixed assets during 1992 totalled \$3,527 million. Of this amount, \$1,200 million was spent on construction of the Darlington Generating Station. Darlington Unit 1 and Unit 3 were placed in service in November 1992 and February 1993, respectively, and unit 4 is expected to be placed in service in the second half of 1993. In addition, the 1992 expenditures reflected continued emphasis on investment in the transmission and distribution facilities to maintain a high level of service and reliability. During 1992, \$870 million was invested in constructing major transmission and distribution facilities. In addition, \$299 million was spent on rehabilitation of the Lambton Generating Station and four units at the Lakeview Generating Station, and on the installation of environmental controls at Lambton.

### FINANCING AND CAPITAL MARKETS

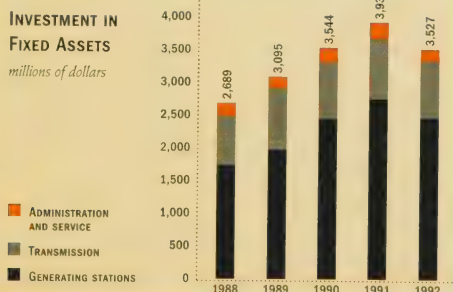
The cash required by Ontario Hydro to finance its investment in fixed assets comes from two major sources: operations and financing through borrowing. For 1992, operations provided \$1,691 million and cash provided from financing was \$1,811 million. For 1991, the amounts were \$1,381 million and \$2,748 million, respectively.

In 1992, Ontario Hydro met its borrowing requirement for the year and pre-borrowed a portion of its 1993 requirement. Total proceeds from debt issued during the year amounted to \$5,863 million. Proceeds of \$5,104 million were received from three domestic and two global Canadian dollar bond issues. These long-term debt issues have an average annual interest rate of 8.9 per cent and an average term of 15 years. This compares to proceeds during 1991 of \$5,787 million with an average annual rate of 10.3 per cent and an average term of 18 years. Proceeds of \$759 million from the issuance of short-term notes were used to call and refinance certain bond issues at favourable interest rates. Financial arrangements were also entered into so as to achieve a fixed interest rate on each of the refinanced issues. In 1991, no short-term notes were issued to refinance bonds.

Debt retired in 1992 was \$2,882 million, compared with \$2,310 million in 1991. In 1992, cash amounting to \$2,123 million was used to retire maturing long-term debt and \$759 million was used to retire long-term debt prior to maturity. For 1991, the amounts were \$1,674 million and \$636 million, respectively.

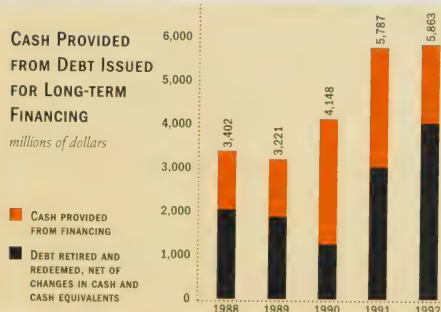
#### INVESTMENT IN FIXED ASSETS

millions of dollars



#### CASH PROVIDED FROM DEBT ISSUED FOR LONG-TERM FINANCING

millions of dollars



At the end of 1992, \$2,193 million of long-term debt was redeemed prior to maturity, using funds provided mainly from pre-borrowing. This debt was reissued at the beginning of 1993. Debt amounting to \$996 million was redeemed at the end of 1991 and reissued in 1992.

Net borrowing for 1992, after the retirement and redemption of outstanding debt, amounted to \$1,784 million, compared with \$2,743 million in 1991.

Ontario Hydro's total long-term debt at the end of 1992 amounted to \$34,034 million, of which \$5,947 million is denominated in United States (US) dollars. Fluctuations in the Canadian / US dollar exchange rate result in unrealized foreign exchange gains and losses on translation of unhedged US dollar debt. Resulting unrealized foreign exchange gains and losses are included in deferred debt costs on the statement of financial position, and are amortized to operations over the remaining life of the related debt. At the end of 1992, deferred debt costs were \$777 million, up \$525 from the previous year. A fall in the value of the Canadian dollar resulted in an increase in the unrealized foreign exchange losses arising on translation of unhedged US dollar debt.

## OUTLOOK

Over the next few years, Ontario Hydro's revenues are expected to increase as a result of modest growth in electricity demand and moderate rate increases. Hydro's current forecast indicates that the demand for electricity is expected to increase at a modest rate, as the Ontario economy recovers from the recession.

The 1993 average rate increase was set at 7.9 per cent, consistent with the rate recommendation by the Ontario Energy Board. The rate increase is mainly due to bringing the last two units at the Darlington Generating Station into service, and other costs related to improving the performance of Ontario Hydro's existing nuclear stations, as well as the impact of the recession on energy consumption. Although placing the Darlington units in service initially increases total operating costs by a significant amount, long-term benefits will result from lower fuelling costs. Most of the fixed costs associated with Darlington have been reflected in 1993 rates, thus the pressure on rates should ease somewhat thereafter.

Cost pressures affecting electricity rates include the impact of improving the performance of aging generation and transmission facilities. Restoration programs are now underway and improvements in operating performance are expected with the completion of the various projects.

Ontario Hydro expects to reduce its expenditures for investment in fixed assets gradually over the next few years, reflecting a lower level of construction activity and capital program reduction initiatives. The corporation will continue to place a high priority on maintaining effective operation and maintenance of the power system.

In 1992, Ontario Hydro announced plans to reduce capital expenditures by more than \$7 billion over the next 10 years. The need for these reductions result from a lower forecast load growth, which has created a significant potential surplus in generation capacity. The lower capital expenditures, combined with targeted reductions in operating costs, will assist in moderating electricity rate increases for Ontario consumers in the future. Most of the capital cost reductions are expected to be realized by cancelling or deferring planned generating and transmission projects and some energy management programs.

Hydro's planned borrowing is forecast to decrease over the next few years mainly as a result of the reduced capital program. Financial market conditions in 1993 are expected to be somewhat less favourable than the past year, reflecting market uncertainties and continued competition for funds. The 1993 borrowing strategy focuses on access to the domestic and Canadian dollar international capital markets. Attention will also be focused on pursuing interest cost savings on callable bonds.

The programs to reduce capital expenditures, cut operating expenses and improve operational performance, combined with the forecast moderate recovery in the Ontario economy, is expected to lead to a general improvement in Ontario Hydro's overall financial situation over the next few years.



## MANAGEMENT REPORT AND AUDITORS' REPORT

### MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL REPORTING

The accompanying financial statements of Ontario Hydro are the responsibility of management and have been prepared in accordance with accounting principles generally accepted in Canada, applied on a basis consistent with that of the preceding year. The significant accounting policies followed by Ontario Hydro are described in the Summary of Significant Accounting Policies. The preparation of financial statements necessarily involves the use of estimates based on management's judgement, particularly when transactions affecting the current accounting period cannot be finalized with certainty until future periods. The financial statements have been properly prepared within reasonable limits of materiality and in light of information available up to March 8, 1993. The information presented elsewhere in the Annual Report is consistent with that in the financial statements.

Management maintains a system of internal controls designed to provide reasonable assurance that the assets are safeguarded and that reliable financial information is available on a timely basis. The system includes formal policies and procedures and an organizational structure that provides for appropriate delegation of authority and segregation of responsibilities. An internal audit function independently evaluates the effectiveness of these internal controls on an ongoing basis and reports its findings to management and the Audit Committee of the Board of Directors.

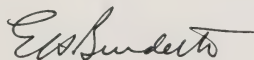
The financial statements have been examined by Ernst & Young, independent external auditors appointed by the Lieutenant-Governor-in-Council of Ontario. The external auditors' responsibility is to express their opinion on whether the financial statements are fairly presented in accordance with generally accepted accounting principles. The Auditors' Report, which follows, outlines the scope of their examination and their opinion.

The Board of Directors, through the Audit Committee, is responsible for ensuring that management fulfils its responsibilities for financial reporting and internal controls. The Audit Committee meets periodically with management, the internal auditors and the external auditors to satisfy itself that each group has properly discharged its respective responsibility, and to review the financial statements before recommending approval by the Board of Directors. The external auditors have direct and full access to the Audit Committee, with and without the presence of management, to discuss their audit and their findings as to the integrity of Ontario Hydro's financial reporting and the effectiveness of the system of internal controls.

*On behalf of Management*



Chairman, Board of Directors and  
Chief Executive Officer



Vice-President,  
Finance

Toronto, Canada,  
March 8, 1993



## AUDITORS' REPORT

To the Board of Directors of Ontario Hydro:

We have audited the statement of financial position of Ontario Hydro as at December 31, 1992 and the statements of operations, equity and source of cash used for investment in fixed assets for the year then ended. These financial statements are the responsibility of Ontario Hydro's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of Ontario Hydro as at December 31, 1992 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles.

*Ernst + Young*

Chartered Accountants

*Toronto, Canada,  
March 8, 1993*

## FINANCIAL STATEMENTS

### SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying financial statements have been prepared in accordance with accounting principles generally accepted in Canada, applied on a basis consistent with that of the preceding year. The significant accounting policies followed by Ontario Hydro are described below.

#### RATE SETTING

Ontario Hydro has broad powers to generate, supply and deliver electric power throughout the Province of Ontario. The corporation operates under the Power Corporation Act and is subject to provisions of the Ontario Energy Board Act.

Under the provisions of the Power Corporation Act, the price payable by municipal and other customers for power is the cost of supplying the power. Such cost is defined in the Act to include the cost of operating and maintaining the system, the cost of energy conservation programs, depreciation, interest, and the amounts appropriated for debt retirement and stabilization of rates and contingencies. The debt retirement appropriation is the amount required under the Act to accumulate on a sinking fund basis over 40 years a sum equal to the debt incurred for the cost of the fixed assets in service. The appropriation for, or withdrawal from, the reserve for stabilization of rates and contingencies is an amount established to maintain a sound financial position and to stabilize the effect of cost fluctuations. The amounts appropriated for debt retirement and stabilization of rates and contingencies are accounted for as net income.

Under the provisions of the Ontario Energy Board Act, a public hearing before the Ontario Energy Board is required to review any changes in electricity rates proposed by Ontario Hydro that affect its municipal utilities, direct industrial customers, or, if the Minister of Environment and Energy so directs, rural retail customers. The Ontario Energy Board then submits its recommendations to the Minister of Environment and Energy. After considering the recommendations of the Ontario Energy Board, Ontario Hydro's Board of Directors, under the authority of the Power Corporation Act, establishes the electricity rates to be charged to customers.

If the Board of Directors specifies an amount related to a certain transaction be included in future electricity rates that, in accordance with the accounting policies summarized below, would be charged or credited to operations in the current year, then this amount is deferred and amortized to future operations on a basis consistent with its inclusion in rates.

#### FIXED ASSETS

Fixed assets in service include operating facilities and non-operating reserve facilities. Construction in progress includes fixed assets under construction and heavy water held for use in nuclear generating stations under construction.

Fixed assets are capitalized at cost, which comprises material, labour, engineering costs, overheads, depreciation on service equipment, interest applicable to capital construction activities and, for new facilities, the costs of training initial operating staff. In the case of generating facilities, the cost also includes the net cost of commissioning, which comprises the cost of start-up less the value attributed to energy produced by generation facilities during their commissioning period. For multi-unit facilities, a proportionate share of the cost of common facilities is placed in service with each major operating unit. The cost of heavy water comprises the direct cost of production and applicable overheads, as well as interest and depreciation on the heavy water production facilities and the estimated removal costs of these facilities. Leases that transfer the benefits and risks of ownership of assets to Ontario Hydro are capitalized.

Interest is capitalized on construction in progress at rates (1992 - 10.5 per cent, 1991 - 10.8 per cent) that approximate the average cost of long-term funds borrowed in the years in which expenditures have been made for fixed assets under construction. If the construction period of a project is extended and the construction activities are continued, interest is capitalized during the period of extension provided that the project has a reasonable expectation of being completed.

If a project is cancelled or deferred indefinitely with a low probability of resuming construction, all costs, including the costs of cancellation, are written off to operations.

If fixed assets are removed from operations and mothballed for future use, termed non-operating reserve facilities, the costs of mothballing are charged to operations.

#### DEPRECIATION

The capital costs of fixed assets in service are depreciated on a straight-line basis. Depreciation rates for the various classes of assets are based on their estimated service lives. Major components of fossil and nuclear generating stations are depreciated over the lesser of the service life expectancy of the major component or the remaining service life of the associated generating station; for hydraulic generating stations, major components are depreciated over the service life expectancy of the component, ranging from 25 to 100 years. The estimated service lives of assets in the major classes are:

Generating stations – fossil	40 years
– nuclear	40 years
Heavy water	over the period ending in the year 2040
Transmission and distribution facilities	10 to 100 years
Heavy water production facilities	20 years
Administration and service facilities	5 to 65 years

In accordance with group depreciation practices, for normal retirements the cost of fixed assets retired is charged to accumulated depreciation with no gain or loss reflected in operations. However, gains and losses on sales of fixed assets and losses on premature retirements are charged to operations in the year incurred as adjustments to depreciation expense.

When the costs of removal less residual value, termed removal costs, on retirements of fixed assets can reasonably be estimated and are significant, provisions for these costs, except for those related to heavy water production facilities, are charged to depreciation expense on an annuity basis over the remaining service life of the related fixed assets. For heavy water production facilities, provisions for removal costs are charged to heavy water production costs on a straight-line basis over the remaining service life of the related facilities. Removal costs that are provided for include the estimated costs of decommissioning nuclear and fossil stations and heavy water production facilities, and the estimated costs of removing certain nuclear reactor fuel channels. Other removal costs are charged to depreciation expense as incurred.

The estimated service lives of fixed assets and the significant assumptions underlying the estimates of fixed asset removal costs are subject to periodic review. Any changes arising out of such a review are implemented on a remaining service life basis from the year the changes can first be reflected in electricity prices.

Non-operating reserve facilities are amortized so that any estimated loss in value is charged to depreciation expense on a straight-line basis over their expected non-operating period.

#### FUEL FOR ELECTRIC GENERATION

Fuel used for electric generation comprises the average inventory costs of fuel consumed, the value attributed to commissioning energy produced, and provisions for disposal of nuclear fuel irradiated during the period. The inventory cost of fuel consumed comprises fuel purchases, transportation and handling costs, and the amortization of advances for fuel supplies.

The value attributed to commissioning energy produced during the period represents the incremental operating and fuel costs of producing the same quantity of energy at generating units displaced because of the commissioning activity. The costs for disposal of nuclear fuel irradiated in each period are charged to operations based on estimated

future expenditures and interest accumulating to the estimated date of disposal. Estimates of expenditures, interest and escalation rates, and the date of disposal are subject to periodic review. Adjustments resulting from changes in estimates are charged to operations on an annuity basis over the period from the year the changes can first be reflected in electricity prices to the estimated in-service date of the disposal facility.

#### **FOREIGN CURRENCY TRANSLATION**

Current monetary assets and liabilities in foreign currencies are translated to Canadian currency at year-end rates of exchange and the resultant exchange gains or losses are credited or charged to operations. Long-term debt payable in foreign currencies is translated to Canadian currency at year-end rates of exchange. Resulting unrealized exchange gains or losses are deferred and included in deferred debt costs, and are amortized to operations on an annuity basis over the remaining life of the related debt.

Foreign exchange gains or losses on hedges of long-term debt payable in foreign currencies are deferred and included in deferred debt costs. The deferred gains or losses on hedges are amortized to operations in the periods the hedges provide benefit.

Foreign exchange gains or losses on early redemption of long-term debt are deferred and included in deferred debt costs if the exposure in the foreign currency related to the redeemed debt is continued by refinancing the redeemed debt in the same currency. These deferred gains or losses are amortized on an annuity basis over the period to the original maturity date of the redeemed debt. If the foreign currency exposure is reduced as a result of the early redemption of debt, the resulting foreign exchange gains or losses related to the redeemed debt are credited or charged to operations.

#### **DEFERRED DEBT COSTS**

Deferred debt costs include the unamortized amounts related to unrealized foreign exchange gains or losses resulting from the translation of foreign currency long-term debt; deferred foreign exchange gains or losses on hedges; deferred foreign exchange gains or losses on the early redemption of long-term debt; discounts or premiums arising from the issuance of debt or the acquisition of debt prior to maturity; and discounts or premiums accrued on foreign currency hedges.

Discounts or premiums arising from the issuance of debt are amortized over the period to maturity of the debt. Discounts or premiums on debt acquired prior to the date of maturity are amortized over the period from the acquisition date to the original maturity date of the debt. Discounts or premiums on foreign currency hedges are credited or charged to operations over the terms of the individual hedges.

#### **DEMAND MANAGEMENT**

Demand management activities undertaken by Ontario Hydro encourage customers to conserve or use electricity more efficiently. Demand management costs that have reasonably assured and specifically identifiable future benefits to Ontario Hydro are deferred and amortized to operations on a straight-line basis over the periods that benefit. All other costs are charged to operations as incurred. The benefit periods of deferred demand management costs are subject to periodic review. Any changes arising out of such a review are implemented on a remaining benefit period basis from the year the changes can first be reflected in electricity prices.

#### **NUCLEAR AGREEMENT – PAYBACK**

Ontario Hydro, Atomic Energy of Canada Limited and the Province of Ontario are parties to a joint undertaking for the construction and operation of units 1 and 2 of the Pickering Nuclear Generating Station, with ownership of these units being vested in Ontario Hydro. Contributions to the capital cost by Atomic Energy of Canada Limited and the Province of Ontario amounted to \$258 million and these have been deducted in arriving at the value of fixed assets in service in respect of Pickering Units 1 and 2. Ontario Hydro is required to make monthly payments, termed "payback", until the year 2003 to each of the parties in proportion to their capital contributions. Payback, in a broad sense, represents the net operational advantage of having the power generated by Pickering Units 1 and 2, compared with power generated by coal-fired units similar to Lambton Units 1 and 2. Payback is charged to the cost of operations and included in Fuel used for electric generation.

During the 1983 through 1988 shutdown period for replacement of pressure tubes in Pickering Units 1 and 2, the payback calculations resulted in negative payback amounts. These amounts have been credited against the cost of operations over the shutdown period and the accumulated amounts, plus interest, are included in the accounts as long-term accounts receivable. With the return to operation of the last of the two units, the accumulated negative payback amounts, plus interest, are to be offset against positive payback amounts as such amounts become payable over the remaining term of the Agreement to Atomic Energy of Canada Limited and to the Province of Ontario.

**PENSION PLAN**

The pension plan is a contributory, defined benefit plan covering all regular employees of Ontario Hydro. Pension costs for accounting purposes are actuarially determined based on the assumptions that reflect management's best estimate of the effect of future events on the actuarial present value of accrued pension benefits, and the valuation of pension plan assets using a five-year market value average. Pension plan surpluses and deficiencies are amortized on an annuity basis over the expected average remaining period of service of the employees covered by Ontario Hydro's pension plan.

**RESEARCH AND DEVELOPMENT**

Research and development costs are charged to operations in the year incurred, except for those related directly to the design or construction of a specific capital facility, which are capitalized as part of the cost of the facility.



## STATEMENT OF OPERATIONS

for the year ended December 31, 1992

<i>millions of dollars</i>	<b>1992</b>	<b>1991</b>
<b>REVENUES</b>		
Primary power and energy		
Municipal utilities	5,281	4,873
Rural retail customers	1,568	1,397
Direct industrial customers	863	811
	<u>7,712</u>	<u>7,081</u>
Secondary power and energy (note 1)	56	62
	<u>7,768</u>	<u>7,143</u>
<b>COSTS</b>		
Operation, maintenance and administration	2,246	2,037
Fuel used for electric generation	1,137	1,122
Power purchased	186	151
Provincial government levies (note 2)	270	252
Depreciation (note 3)	1,198	1,136
	<u>5,037</u>	<u>4,698</u>
<b>INCOME BEFORE FINANCING CHARGES</b>	2,731	2,445
<b>FINANCING CHARGES</b> (note 4)	2,419	2,241
<b>NET INCOME</b>	312	204

See accompanying summary of significant accounting policies and notes to financial statements.

## STATEMENT OF FINANCIAL POSITION

*as at December 31, 1992**millions of dollars***1992****1991****ASSETS****FIXED ASSETS** (note 5)

Fixed assets in service	<b>39,997</b>	34,369
Less accumulated depreciation	<b>9,615</b>	8,744
	<b>30,382</b>	25,625
Construction in progress	<b>10,308</b>	12,545
	<b>40,690</b>	38,170

**CURRENT ASSETS**

Accounts receivable	<b>1,032</b>	919
Fuel for electric generation (note 6)	<b>1,345</b>	1,342
Materials and supplies, at cost	<b>351</b>	402
	<b>2,728</b>	2,663

**OTHER ASSETS**

Deferred debt costs	<b>777</b>	252
Deferred pension costs (note 15)	<b>535</b>	515
Deferred demand management costs	<b>227</b>	94
Other deferred costs (notes 7 and 18)	<b>855</b>	858
Long-term accounts receivable and other assets	<b>859</b>	692
	<b>3,253</b>	2,411
	<b>46,671</b>	43,244

*See accompanying summary of significant accounting policies and notes to financial statements.*

millions of dollars

1992

1991

## LIABILITIES

### LONG-TERM DEBT (note 8)

31,238

30,097

### CURRENT LIABILITIES

Bank indebtedness (note 9)

635

641

Accounts payable and accrued charges

1,202

876

Short-term notes payable (note 10)

898

94

Accrued interest

951

942

Long-term debt payable within one year (note 8)

2,796

2,063

6,482

4,616

### OTHER LIABILITIES

Long-term accounts payable and accrued charges

503

571

Accrued fixed asset removal and irradiated fuel  
disposal costs (note 11)

1,517

1,341

2,020

1,912

### CONTINGENCIES (notes 7 and 12)

### EQUITY

Accumulated debt retirement appropriations

5,162

4,716

Reserve for stabilization of rates and contingencies

1,642

1,776

Contributions from the Province of Ontario as  
assistance for rural construction

127

127

6,931

6,619

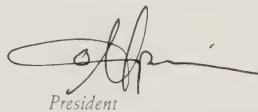
46,671

43,244

On behalf of the Board,



Chairman, Board of Directors and  
Chief Executive Officer



President

Toronto, Canada,  
March 8, 1993

## STATEMENT OF EQUITY

for the year ended December 31, 1992

millions of dollars

	Accumulated Debt Retirement Appropriations	Reserve for Stabilization of Rates and Contingencies	Contributions from the Province	Total 1992	Total 1991
BALANCE AT BEGINNING OF YEAR	4,716	1,776	127	6,619	6,416
Net income (note 13)	312	—	—	312	204
Transfer to satisfy debt retirement appropriation (note 13)	134	(134)	—	—	—
	446	(134)	—	312	204
Net refunds on annexation by municipalities	—	—	—	—	(1)
BALANCE AT END OF YEAR	5,162	1,642	127	6,931	6,619

See accompanying summary of significant accounting policies and notes to financial statements.

## STATEMENT OF SOURCE OF CASH USED FOR INVESTMENT IN FIXED ASSETS

for the year ended December 31, 1992

<i>millions of dollars</i>	<b>1992</b>	<b>1991</b>
<b>CASH PROVIDED FROM OPERATIONS</b>		
Net income	312	204
Items not requiring cash in the current year		
Depreciation	1,198	1,136
Amortization of foreign exchange gains and losses	59	(22)
Provision for irradiated fuel disposal costs	42	45
Other	29	42
	<b>1,640</b>	<b>1,405</b>
Changes in non-cash working capital and long-term accounts payable affecting operations – decrease (increase) (note 14)	51	(24)
Cash provided from operations	<b>1,691</b>	<b>1,381</b>
<b>CASH PROVIDED FROM FINANCING (note 14)</b>		
Debt for long-term financing		
Issued	5,863	5,787
Retired	(2,882)	(2,310)
Redemption of long-term debt, net of reissuances	(1,197)	(734)
	<b>1,784</b>	<b>2,743</b>
Changes in cash and cash equivalents		
Bank indebtedness – (decrease) increase	(6)	19
Short-term notes used for cash management – increase (decrease)	33	(14)
	<b>27</b>	<b>5</b>
Cash provided from financing	<b>1,811</b>	<b>2,748</b>
<b>CASH PROVIDED FROM OPERATIONS AND FINANCING</b>	<b>3,502</b>	<b>4,129</b>
Cash used for financing other assets	(127)	(773)
<b>CASH USED FOR INVESTMENT IN FIXED ASSETS (note 14)</b>	<b>3,375</b>	<b>3,356</b>

See accompanying summary of significant accounting policies and notes to financial statements.



## NOTES TO FINANCIAL STATEMENTS

### 1. SECONDARY POWER AND ENERGY

Secondary power and energy revenues include \$53 million (1991 – \$60 million) from sales of electricity to United States utilities.

### 2. PROVINCIAL GOVERNMENT LEVIES

<i>millions of dollars</i>	<b>1992</b>	<b>1991</b>
Provincial water rentals	<b>109</b>	105
Provincial debt guarantee fee	<b>161</b>	147
	<b>270</b>	252

Provincial water rentals are the amounts paid to the Province of Ontario for the use of water for hydraulic generation. The Province of Ontario has legislated that Ontario Hydro pay to the Province an annual debt guarantee fee of one half of one per cent on the total debt guaranteed by the Province outstanding as of the preceding December 31.

### 3. DEPRECIATION

<i>millions of dollars</i>	<b>1992</b>	<b>1991</b>
Depreciation of fixed assets in service	<b>1,068</b>	991
Amortization of other deferred costs	<b>39</b>	39
Amortization of deferred demand management costs	<b>13</b>	3
Fixed asset removal costs	<b>101</b>	140
Other removal costs	<b>105</b>	84
	<b>1,326</b>	1,257
Less:		
Depreciation charged to – construction in progress	<b>74</b>	68
– heavy water production	<b>50</b>	50
– fuel for electric generation	<b>1</b>	2
Other	<b>3</b>	1
	<b>128</b>	121
	<b>1,198</b>	1,136

#### 4. FINANCING CHARGES

<i>millions of dollars</i>	1992	1991
Interest on bonds, notes and other debt	3,658	3,465
Interest on accrued fixed asset removal and irradiated fuel disposal costs	124	121
	3,782	3,586
Less:		
Interest charged to – construction in progress	1,167	1,093
– heavy water production	55	62
– fuel for electric generation	9	39
Interest earned on investments	119	158
	1,350	1,352
Interest charged to operations	2,432	2,234
Foreign exchange	(13)	7
	2,419	2,241

#### 5. FIXED ASSETS

<i>millions of dollars</i>	1992			1991		
	<i>Fixed Assets in Service</i>	<i>Accumulated Depreciation</i>	<i>Construction in Progress</i>	<i>Fixed Assets in Service</i>	<i>Accumulated Depreciation</i>	<i>Construction in Progress</i>
Generating stations – hydraulic	2,229	739	559	2,172	714	473
– fossil	4,453	1,839	783	3,972	1,705	664
– nuclear	17,836	2,969	6,777	14,184	2,561	8,935
Heavy water	3,308	444	1,334	2,909	391	1,453
Transmission and distribution	9,151	2,158	794	8,192	1,979	895
Heavy water production facilities	1,063	612	—	1,129	603	—
Administration and service facilities	1,957	854	61	1,811	791	125
	39,997	9,615	10,308	34,369	8,744	12,545

##### DARLINGTON NUCLEAR GENERATING STATION

A major portion of the construction in progress as at December 31, 1992 relates to the construction program for the Darlington Nuclear Generating Station. The cost of construction in progress associated with this program, including heavy water, amounted to \$6,809 million as at December 31, 1992 (1991 – \$9,482 million).

Darlington Unit 2 was declared in service for commercial operation in October 1990. In December 1990, investigation into a refuelling problem in this unit revealed damage to some fuel bundles. As a consequence, unit 2 was shut down in January 1991 for more detailed inspection and investigation of the problem. As a result of this investigation, modifications to the heat transport system were performed and unit 2 was returned to full power in 1992.

Darlington Unit 1 was in the commissioning phase when the unit was shut down in March 1991 for investigation into the fuel damage problem discovered in unit 2. During 1991 and 1992, unit 1 was run intermittently for tests to determine the nature of the fuel damage problem. Following modifications to the heat transport system, the unit

was declared in service in November 1992. Darlington Unit 3 was declared in service in February 1993 and Unit 4 is planned to be placed in service in the second half of 1993. When completed, the Darlington Nuclear Generating Station will provide a total of 3,524 megawatts of dependable capacity. As at December 31, 1992, the estimated cost to complete the Darlington construction program is \$526 million, including cost escalation and interest of approximately \$213 million.

## 6. FUEL FOR ELECTRIC GENERATION

<i>millions of dollars</i>	<b>1992</b>	<b>1991</b>
Inventories – uranium	<b>725</b>	773
– coal	<b>525</b>	483
– oil	<b>95</b>	86
	<b>1,345</b>	1,342

## 7. OTHER DEFERRED COSTS

<i>millions of dollars</i>	<b>1992</b>	<b>1991</b>
Bruce Heavy Water Plant "D"	<b>37</b>	74
Wesleyville Generating Station	<b>2</b>	4
Fuel oil contract	<b>—</b>	29
Coal purchase agreement	<b>17</b>	34
Denison Mines Limited uranium supply contract	<b>242</b>	269
Rio Algom Limited uranium supply contract	<b>448</b>	448
Manitoba Hydro power purchase contract	<b>109</b>	—
	<b>855</b>	858

Other deferred costs are amounts that the Board of Directors, under its rate setting authority, has determined be deferred and amortized for recovery through electricity rates on a straight-line basis over a specified period of years (see note 18).

As a result of decisions taken in 1991 by Ontario Hydro to cancel the Denison Mines Limited and to amend the Rio Algom Limited long-term uranium supply contracts, the estimated outstanding advances and associated costs at the expiration of the contracts have been deferred and are to be amortized for recovery through future electricity rates on a straight-line basis over the periods 1992 through 2001, and 1994 through 2003, respectively.

In 1989, Ontario Hydro entered into a 22-year contract with Manitoba Hydro (the Contract) to purchase up to 1,000 MW of power per year beginning in the year 2000. On December 17, 1992, due to a projected surplus in generation capacity, Ontario Hydro exercised its right to terminate the Contract. On termination, the Contract requires Ontario Hydro to reimburse Manitoba Hydro for the lesser of \$315 million or Manitoba Hydro's internal and out-of-pocket costs. Manitoba Hydro has provided Ontario Hydro with a certificate detailing its costs of

\$131 million through to the date of termination, and an estimate of additional costs of up to \$6 million to be incurred subsequent to the date of termination. Under the Contract, Ontario Hydro has the right to verify all amounts claimed by Manitoba Hydro. Ontario Hydro's interpretation of the Contract is that its liability is limited to costs incurred by Manitoba Hydro subsequent to entering into the Contract with Ontario Hydro on December 7, 1989. On this basis, on February 25, 1993, Ontario Hydro made a payment of \$82 million to Manitoba Hydro. The \$82 million payment plus \$27 million of related project expenditures incurred directly by Ontario Hydro amount to a \$109 million loss on cancellation of the Contract. The \$109 million loss will not be charged directly to operations in 1992, since the Board of Directors, under its rate-setting authority, determined that the costs of cancelling the Contract will be deferred and amortized for recovery through future electricity rates on a straight-line basis over the period 1994, the first year such costs can be reflected in rates, through 2003. No provision has been accrued in Ontario Hydro's financial statements with respect to the \$49 million difference between the amount claimed of \$131 million and the payment of \$82 million because Ontario Hydro is of the opinion that costs incurred by Manitoba Hydro before December 7, 1989 are not reimbursable by Ontario Hydro under the Contract; and no provision has been accrued with respect to Manitoba Hydro's estimate of additional costs of up to \$6 million to be incurred subsequent to the date of termination of the Contract. Subsequent payments, if any, to Manitoba Hydro with respect to the Contract cancellation will be included in the amount deferred for recovery through future electricity rates.

In 1992, \$39 million and \$73 million (1991 - \$39 million and \$46 million) of other deferred costs were charged to depreciation, and fuel used for electric generation, respectively.

## 8. LONG-TERM DEBT

<i>millions of dollars</i>	<b>1992</b>	<b>1991</b>
Bonds and notes payable	<b>33,994</b>	32,098
Other long-term debt	<b>40</b>	62
	<b>34,034</b>	32,160
Less payable within one year	<b>2,796</b>	2,063
	<b>31,238</b>	30,097

Bonds and notes payable, expressed in Canadian dollars, are summarized by years of maturity and by the currency in which they are payable in the following table:

YEARS OF MATURITY	1992				1991	
	Canadian	Principal Outstanding Foreign	Total	Weighted Average Interest Rate per cent	Principal Outstanding Total	Weighted Average Interest Rate per cent
1992	—	—	—		2,037	
1993	2,749	45	2,794		2,840	
1994	1,129	617	1,746		1,885	
1995	1,580	808	2,388		2,571	
1996	2,284	181	2,465		2,625	
1997	912	145	1,057		—	
1 – 5 years	8,654	1,796	10,450	10.6	11,958	10.8
6 – 10 years	9,578	1,184	10,762	10.0	7,861	10.4
11 – 15 years	1,752	638	2,390	9.7	2,152	10.8
16 – 20 years	2,960	2,213	5,173	11.1	5,595	10.5
21 – 25 years	598	246	844	10.5	1,182	11.8
26 years and over	4,375	—	4,375	10.1	3,350	10.4
	27,917	6,077	33,994	10.3	32,098	10.6
<b>CURRENCY IN WHICH PAYABLE</b>						
Canadian dollars			27,917		25,475	
United States dollars			5,947		6,496	
Swiss francs			130		127	
			33,994		32,098	

Bonds and notes payable are either held, or guaranteed as to principal and interest, by the Province of Ontario.

Bonds and notes payable in United States dollars include \$4,013 million (1991 – \$4,292 million) of Ontario Hydro bonds held by the Province of Ontario and having terms identical with Province of Ontario issues sold in the United States on behalf of Ontario Hydro.

Ontario Hydro has entered into financial arrangements as a vehicle for setting the interest rates in advance of future financing. As at December 31, 1992, obligations to sell \$65 million of Government of Canada bonds in 1992 were outstanding (1991 – \$717 million).

Ontario Hydro has entered into various financial arrangements to hedge a portion of its foreign currency exposure.

*Forward exchange contracts.* Forward exchange contracts amounted to US\$1,274 million as at December 31, 1992 (1991 – US\$2,834 million), having a weighted average Canadian dollar exchange rate of 1.26 (1991 – 1.22). These forward exchange contracts hedge principal and interest payments amounting to US\$145 million due in 1993 and the remaining US\$1,129 million hedge principal and interest payments due over the period 1994 through 1998.

*Foreign currency swap contracts.* Foreign currency swap contracts to exchange US\$837 million and Swiss franc 250 million of principal and interest payments into Canadian dollars were outstanding as at December 31, 1992 (1991 – US\$897 million).



and Swiss franc 261 million). Of this, US\$60 million and Swiss franc 11 million are due in 1993, and US\$777 million and Swiss franc 239 million due over the period 1994 to 2001.

*Foreign currency options.* Option contracts giving Ontario Hydro the right to buy US\$713 million were outstanding as at December 31, 1992 (1991 – US\$135 million). Option contracts giving holders the right to buy US\$713 million from Ontario Hydro were outstanding at December 31, 1992 (1991 – nil).

## 9. BANK INDEBTEDNESS

Bank indebtedness includes short-term bank lines of credit available to Ontario Hydro in the amount of \$600 million. The lines of credit are unsecured and bear interest at approximately the Canadian prime rate.

## 10. SHORT-TERM NOTES PAYABLE

<i>millions of dollars</i>	1992	1991
Short-term notes used for cash management	127	94
Short-term notes used for long-term financing	771	—
	898	94

During 1992, certain bond issues were called and refinanced at favourable interest rates by issuing short-term notes. Financial arrangements were also entered into so as to achieve a fixed interest rate on the refinanced issues.

## 11. ACCRUED FIXED ASSET REMOVAL AND IRRADIATED FUEL DISPOSAL COSTS

<i>millions of dollars</i>	1992	1991
Accrued fixed asset removal costs		
– accrued decommissioning costs	447	376
– accrued fuel channel removal costs	374	347
	821	723
Accrued irradiated fuel disposal costs	696	618
	1,517	1,341

### FIXED ASSET REMOVAL COSTS

Fixed asset removal costs are the costs of decommissioning nuclear and fossil generating stations and heavy water production facilities after the end of their service lives, and the costs of removing certain fuel channels that are expected to be replaced during the life of the nuclear reactors. The significant assumptions used in estimating fixed asset removal costs were:

- decommissioning of nuclear generating stations in the 2042 to 2065 period on the deferred dismantlement basis (dismantlement following storage with surveillance for a 30-year period after shutdown of the reactors), and a transportation distance of 1,000 kilometres from nuclear generating facilities to disposal facilities;
- dismantlement of Bruce Heavy Water Plants "A", "B" and "D" in the 1994 to 2005 period;
- interest rates through to 2065 ranging from 9% to 11% (1991 – 9% to 11%);
- escalation rates through to 2065 ranging from 4% to 7% (1991 – 4% to 7%); and
- removal of fuel channels in Pickering Nuclear Generating Station "A" Unit 4 in the 1991 to 1993 (1991 – 1991 to 1993) period, Bruce Nuclear Generating Station "A" Units 1 and 2 in the 1993 to 1999 (1991 – 1993 to 1999) period and Units 3 and 4 in the 2002 to 2010 (1991 – 2002 to 2010) period (see note 18), Pickering "B" in the 2012 to 2017 (1991 – 2012 to 2017) period, Bruce "B" in the 2014 to 2019 (1991 – 2014 to 2019) period, and Darlington Nuclear Generating Station in the 2019 to 2024 (1991 – 2019 to 2024) period.

Because of possible changes to the above factors and the methods used for decommissioning and fuel channel removal, these costs are subject to revision.

#### **IRRADIATED FUEL DISPOSAL COSTS**

The significant assumptions used in estimating the future irradiated fuel disposal costs were:

- an in-service date of the year 2025 (1991 – 2025) for irradiated nuclear fuel disposal facilities;
- a transportation distance of 1,000 kilometres from nuclear generating facilities to disposal facilities;
- interest rates through to the disposal date ranging from 9% to 11% (1991 – 9% to 11%); and
- escalation rates through to the disposal date ranging from 4% to 7% (1991 – 4% to 7%).

Because of the uncertainties associated with the technology of disposal, and the above factors, these costs are subject to change.

## **12. CONTINGENCIES**

### **DENISON MINES LIMITED**

In April 1991, Ontario Hydro notified Denison Mines Limited (Denison), pursuant to the provisions in the contract, that the long-term uranium supply contract would be terminated effective January 1, 1993. In Denison's 1992 estimated base price and 1991 base price statements for the cost of production of uranium supplied to Ontario Hydro, Denison included significant amounts for depreciation and other costs, which Denison claims result from a revision to the estimated life of its Elliot Lake uranium mine as a consequence of the contract termination by Ontario Hydro and Denison's decision to close the mine. Ontario Hydro rejected both statements as not being in accordance with the requirements of the supply contract. The position being asserted by Denison would result in additional charges to Ontario Hydro estimated to be in excess of \$350 million related to uranium deliveries in 1991 and 1992. Ontario Hydro is of the opinion that the parties never intended that Denison be reimbursed for such charges in the event of contract termination. Such charges would be in addition to the requirement that Ontario Hydro forgive the unrefunded portion of the advances made by Ontario Hydro for the mine expansion. Ontario Hydro is also of the opinion that such charges are not a cost of production in accordance with generally accepted accounting principles consistently applied as required by the supply contract. This dispute has been submitted to arbitration and the hearing is expected to commence in March 1993. At this time, the outcome of the dispute involving Denison's claim for significant depreciation and other costs is not determinable, and as such, no provision has been accrued in Ontario Hydro's financial statements with respect to any amounts in dispute.

## **13. STATEMENT OF EQUITY**

The 1992 net income available for appropriation was \$312 million. To satisfy the requirements of the Power Corporation Act, \$446 million was appropriated for debt retirement, necessitating a withdrawal of \$134 million from the reserve for the stabilization of rates and contingencies. In 1991, the amounts were \$416 million and \$212 million, respectively, and net income was \$204 million.

## **14. STATEMENT OF SOURCE OF CASH USED FOR INVESTMENT IN FIXED ASSETS**

Cash provided from financing represents the amount of cash provided from the issuance of long-term debt and the issuance of short-term notes used for long-term financing, less the amount of cash used to retire or redeem long-term debt, and the effects of changes in cash and cash equivalents. Cash and cash equivalents are defined to be cash and short-term investments less bank indebtedness and short-term notes used for cash management.

The changes in non-cash working capital and long-term accounts payable affecting operations consisted of the following:

<i>millions of dollars</i>	<b>1992</b>	<b>1991</b>
Accounts receivable – (increase)	(113)	(167)
Fuel for electric generation – (increase) decrease	(3)	10
Materials and supplies – decrease (increase)	51	(4)
Accounts payable and accrued charges – increase	188	65
Accrued interest – increase	6	120
Long-term accounts payable and accrued charges – (decrease)	(78)	(48)
	<b>51</b>	<b>(24)</b>

The reconciliation of cash used for investment in fixed assets with investment in fixed assets is shown below:

<i>millions of dollars</i>	<b>1992</b>	<b>1991</b>
Cash used for investment in fixed assets	3,375	3,356
Changes in accounts payable and accrued charges affecting investment in fixed assets – increase	152	578
Investment in fixed assets	<b>3,527</b>	<b>3,934</b>

## 15. BENEFIT PLANS

Ontario Hydro's employee benefit programs include the pension plan, the group life insurance plan and the long-term disability plan. The assets of these plans and the changes in assets during the year are shown in the financial statements of The Pension and Insurance Fund and are not included in Ontario Hydro's financial statements.

### PENSION PLAN

The pension costs for 1992 were \$161 million (1991 – \$143 million). In 1992, \$106 million (1991 – \$94 million) of the pension costs were charged to operations and \$55 million (1991 – \$49 million) were capitalized. The pension costs for 1992 were actuarially determined for accounting purposes using the following significant assumptions, which take into consideration the long-term nature of the pension plan:

- rate used to discount future pension benefits – 7.00% (1991 – 8.75%);
- rate used to estimate interest cost – 7.00% (1991 – 8.75%);
- rate used to estimate return on investments – 9.00% (1991 – 9.75%);
- salary schedule escalation rate – 4.00% (1991 – 5.75%);
- average long-term rate used to estimate improvements in pension benefits to partially offset the effect of increase in cost of living – 2.81% (1991 – 3.75%); and
- average remaining period of service of the employees – 17 years (1991 – 16 years).

Based on these assumptions, the actuarial present value of the accrued pension benefits is estimated to be \$6,386 million as at December 31, 1992 (1991 – \$5,430 million), and the pension plan assets available for these benefits were \$5,748 million (1991 – \$5,227 million) based on a five-year market value average.

Deferred pension costs on the statement of financial position represent the cumulative difference between the funding contributions, including special payments, and pension costs. As at December 31, 1992, the deferred pension costs amounted to \$535 million (1991 – \$515 million) and primarily reflect special payments made in 1990

and 1991 relating to past service benefit improvements. The costs of pension benefit improvements funded by the special payments are being amortized as a charge to pension costs over the average remaining period of service of the employees.

#### **GROUP LIFE INSURANCE PLAN**

From April 1986 to May 1992, the plan assets were used to pay both the employee and employer insurance premiums for all members of the plan. Commencing in June 1992, Ontario Hydro resumed paying premiums for basic insurance coverage and employees resumed paying premiums for additional coverage.

#### **GROUP HEALTH CARE PLAN**

Ontario Hydro provides a group health care plan to its employees. In 1992, the cost of providing these benefits was \$51 million (1991 – \$42 million).

#### **OTHER POST-EMPLOYMENT BENEFITS**

In addition to pension benefits, Ontario Hydro provides group life insurance and health care benefits to its retired employees and, in certain cases, their surviving spouses and unmarried dependents. The cost of providing the group life insurance and health care benefits is charged to operations as the benefits are paid. In 1992, the cost of providing these benefits was \$16 million (1991 – \$14 million).

### **16. RESEARCH AND DEVELOPMENT**

In 1992, approximately \$134 million of research and development costs were charged to operations and \$49 million were capitalized (1991 – \$145 million and \$20 million, respectively).

### **17. COMPARATIVE FIGURES**

Certain of the 1991 comparative figures in the Statement of Financial Position, Statement of Operations and the Statement of Source of Cash Used for Investment in Fixed Assets have been reclassified to conform with the 1992 financial statement presentation.

### **18. SUBSEQUENT EVENT**

On March 8, 1993, Ontario Hydro approved an extensive capital and cost reduction and restructuring program, which is designed to enable Ontario Hydro to seek no rate increase in 1994 and to freeze rates in real terms for the remainder of the decade. Capital expenditures over the next 10 years are expected to be reduced by \$10 billion. As part of the program, no commitment will be made at this time to retube the Bruce "A" nuclear reactors, which will continue to be maintained and operated as long as safety requirements permit (see note 11). The retubing option will remain open, subject to a review process prior to any further decisions to undertake retubing. The program is expected to result in staff reductions of approximately 4,500, most of which will occur by the end of 1993. The staff reductions, currently estimated to result in a \$500 million charge to operations in 1993, will be achieved mainly through a range of options for voluntary departure. In addition, management has indicated its intention to recommend to the Board of Directors that some or all of the Other deferred costs, amounting to \$855 million as at December 31, 1992, be written-off as a charge to operations in 1993 (see note 7).



# **FIVE-YEAR SUMMARY OF FINANCIAL & OPERATING STATISTICS**

<i>millions of dollars</i>	1992	1991	1990	1989	1988
<b>REVENUES</b>					
Primary power and energy					
Municipal utilities	5,281	4,873	4,373	4,209	3,824
Rural retail customers	1,568	1,397	1,297	1,256	1,103
Direct industrial customers	863	811	792	790	730
	7,712	7,081	6,462	6,255	5,657
Secondary power and energy	56	62	22	91	156
	7,768	7,143	6,484	6,346	5,813
<b>COSTS</b>					
Operation, maintenance and administration	2,246	2,037	1,927	1,534	1,354
Fuel used for electric generation	1,137	1,122	1,020	1,133	1,133
Power purchased	186	151	477	230	57
Provincial government levies	270	252	235	177	91
Depreciation	1,198	1,136	908	845	811
	5,037	4,698	4,567	3,919	3,446
<b>INCOME BEFORE FINANCING CHARGES</b>	2,731	2,445	1,917	2,427	2,367
<b>FINANCING CHARGES</b>					
Gross interest	3,782	3,586	3,204	3,016	2,845
Capitalized interest	(1,231)	(1,194)	(1,318)	(1,175)	(1,012)
Investment income	(119)	(158)	(83)	(144)	(93)
Foreign exchange	(13)	7	(15)	31	1
	2,419	2,241	1,788	1,728	1,741
<b>NET INCOME</b>	312	204	129	699	626
<b>FINANCIAL POSITION</b>					
Total assets	46,671	43,244	39,373	36,277	34,358
Fixed assets	40,690	38,170	35,139	32,362	29,975
Long-term debt <sup>1</sup>	34,034	32,160	29,378	26,802	25,905
Equity	6,931	6,619	6,416	6,287	5,588
<b>CASH FLOWS</b>					
Cash provided from operations	1,691	1,381	754	1,705	1,368
Cash provided from financing	1,811	2,748	2,889	1,330	1,350
Cash used for investment in fixed assets	3,375	3,356	3,592	2,992	2,673
Investment in fixed assets	3,527	3,934	3,544	3,095	2,689
<b>FINANCIAL INDICATORS</b>					
Interest coverage <sup>2</sup>	1.09	1.06	1.04	1.24	1.23
Debt ratio <sup>3</sup>	0.841	0.838	0.829	0.817	0.829
<b>PRIMARY ENERGY SALES<sup>4</sup> <i>millions of kilowatt-hours</i></b>					
Municipal utilities	91,317	93,623	92,116	93,715	89,607
Rural retail customers	18,938	18,988	19,444	19,767	18,365
Direct industrial customers	18,094	18,353	19,315	20,491	20,096
	128,349	130,964	130,875	133,973	128,068
<b>SECONDARY ENERGY SALES<sup>4</sup> <i>millions of kilowatt-hours</i></b>					
	1,896	2,123	577	2,292	5,019



	1992	1991	1990	1989	1988
<b>ENERGY AND DEMAND</b>					
Installed dependable peak capacity <i>megawatts</i> <sup>5</sup>	32,231	32,333	31,350	30,271	30,333
December primary peak demand <i>megawatts</i>	21,339	22,933	21,785	23,630	23,012
Primary energy made available <i>millions of kilowatt-hours</i> <sup>6</sup>	134,376	136,966	136,744	140,770	134,395
<b>NUMBER OF PRIMARY CUSTOMERS<sup>4</sup></b>					
Municipal utilities	311	311	314	315	316
Rural retail customers	940,501	925,641	918,368	894,485	863,049
Direct industrial customers	108	109	119	116	107
<b>AVERAGE REVENUE<sup>4</sup></b> <i>in cents per kilowatt-hour of total energy sales</i>					
Primary power and energy					
Municipal utilities	5.783	5.205	4.747	4.491	4.268
Rural retail customers	8.884	7.883	7.352	6.801	6.361
Direct industrial customers	4.770	4.419	4.100	3.855	3.633
All primary customers combined	6.070	5.459	5.024	4.715	4.453
Secondary power and energy	2.954	2.920	3.813	3.970	3.108
All classifications combined	6.024	5.419	5.001	4.702	4.402
<b>AVERAGE RATE INCREASES</b> <i>expressed as a per cent</i>					
Municipal utilities	11.8	8.7	6.1	5.0	4.7
Rural retail customers	11.8	8.7	5.3	5.9	4.4
Direct industrial customers	11.8	7.8	5.6	6.0	5.2
All primary customers combined	11.8	8.6	5.9	5.3	4.7
<b>AVERAGE COST<sup>4,7</sup></b> <i>in cents per kilowatt-hour of energy generated</i>					
Hydraulic					
Operation, maintenance and administration	.280	.299	.271	.275	.270
Water rentals	.317	.338	.303	.287	.274
Depreciation, debt guarantee fee and financing charges	.454	.424	.373	.389	.386
	1.051	1.061	.947	.951	.930
Nuclear					
Operation, maintenance and administration	1.229	1.033	1.100	.739	.623
Uranium	.515	.502	.490	.458	.453
Depreciation, debt guarantee fee and financing charges	3.080	2.756	2.631	2.241	2.078
	4.824	4.291	4.221	3.438	3.154
Fossil					
Operation, maintenance and administration	.960	.839	.899	.600	.530
Coal, gas and oil	2.426	2.388	2.479	2.217	2.258
Depreciation, debt guarantee fee and financing charges	1.651	1.489	1.274	.931	.918
	5.037	4.716	4.652	3.748	3.706

	1992	1991	1990	1989	1988
<b>AVERAGE NUMBER OF EMPLOYEES</b>					
Regular	28,835	28,396	26,821	25,147	24,543
Non-regular <sup>8</sup>	6,004	7,309	9,653	8,929	7,930

1 Long-term debt includes long-term debt payable within one year.

2 Interest coverage represents net income plus interest on bonds, notes and other debt divided by interest on bonds, notes and other debt.

3 Debt ratio represents debt (bonds and notes payable, short-term notes payable, other long-term debt, accrued fixed asset removal and irradiated fuel disposal costs and bank indebtedness less unamortized foreign exchange gains and losses) divided by debt plus equity.

4 Figures for 1992 are preliminary.

5 Installed dependable peak capacity represents the net output power supplied by all generating units, and includes non-operating reserve facilities: 1992 - 1,554 megawatts; 1991 - 1,546 megawatts; 1990 - 1,551 megawatts; 1989 - 2,109 megawatts; and 1988 - 2,109 megawatts. Also included are net firm power purchase contracts.

6 Primary energy made available represents primary energy sales plus transmission losses and energy used for heavy water production and generation projects.

7 Average cost per kilowatt-hour represents the costs attributable to generation but excludes the costs related to transmission, distribution and corporate administrative activities. These figures reflect the historical accounting costs of operating facilities and the actual energy generated by these facilities during the year.

8 The majority of non-regular staff are construction trades persons.

## CUSTOMERS SERVED BY ONTARIO HYDRO AND ASSOCIATED MUNICIPAL UTILITIES

	1992 <sup>1</sup>	1991	1990	1989	1988
<b>TOTAL NUMBER OF CUSTOMERS</b> <i>in thousands</i>					
Residential	3,181	3,163	3,129	3,064	2,958
Farm	104	105	105	105	106
Commercial and industrial	425	428	420	408	392
	3,710	3,696	3,654	3,577	3,456

### **AVERAGE ANNUAL USE** *in kilowatt-hours per customer*

Residential	11,500	11,581	11,668	11,856	11,588
Farm	23,447	23,945	23,945	24,762	24,795
Commercial and industrial	198,000	205,982	212,193	225,103	224,705

### **AVERAGE REVENUE**<sup>2</sup> *in cents per kilowatt-hour*

Residential	8.07	7.23	6.68	6.25	5.99
Farm	8.19	7.34	6.80	6.44	6.14
Commercial and industrial	6.32	5.70	5.22	4.88	4.62
All customers	6.87	6.16	5.67	5.29	5.03

1 Figures for 1992 are preliminary.

2 Includes rural rate assistance.

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## FACTS ABOUT ONTARIO HYDRO

Ontario Hydro was created in 1906 by a provincial statute and today operates under the Power Corporation Act, selling electricity directly to municipal utilities, large industrial customers and retail customers in rural and remote areas of the province. Steam and hot water are also produced and sold in Ontario by the corporation. Ontario Hydro International provides project management and professional consulting services in more than 50 countries around the world, and sells a variety of products for technical applications and research.

### Ontario Hydro Customers:

311 Municipal utilities serving  
2,800,000 Customers  
940,500 Rural retail customers  
108 Large direct customers  
International consulting and  
by-product sales

### Ontario Hydro Supply System:

69 Hydroelectric stations	26.8 %
8 Fossil-fuelled stations	20.7 %
5 Nuclear stations	48.9 %
Non-utility purchases	2.2 %
Purchases from other utilities	1.4 %
135,000 km (approx) transmission grid	
31,000 MW (approx) capacity	

### Total Revenue

\$7.8 billion

### Total Assets

\$46.7 billion

### Total Costs

\$7.4 billion

### Long-term Debt

\$34.0 billion

Ontario Hydro is a self-sustaining corporation without share capital. Bonds and notes issued by Hydro are guaranteed by the Province of Ontario. The corporation is governed by a Board of Directors consisting of up to 22 members. Members and the Chairman, who also serves as Chief Executive Officer of the corporation, are appointed by the Lieutenant-Governor-in-Council. The President of the corporation is appointed by the Board of Directors. Eight board committees review the corporation's plans and performance: Finance, Audit, Management Resources, Technical Advisory, Pension and Insurance Fund Investment, Environment, Aboriginal and Northern Affairs and Social Responsibility.

Ontario Hydro's head office is located at 700 University Avenue, Toronto, Ontario M5G 1X6. We also have regional headquarters in London, Belleville, Markham, North Bay and Thunder Bay with 47 area offices across the province to serve our customers. For additional copies of this report, call 1-800-263-9000.

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